



1952.  
—  
QUEENSLAND.



ANNUAL REPORT  
ON THE  
HEALTH AND MEDICAL SERVICES  
OF THE  
STATE OF QUEENSLAND  
FOR THE  
YEAR 1951-52.

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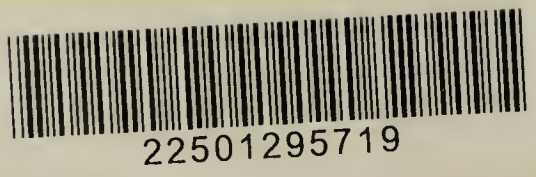
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# ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH AND MEDICAL SERVICES, 1951-52.

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The Honourable the Minister for Health and Home Affairs.

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SIR,—I have the honour to submit for your information the annual report of the Health and Medical Services Branch of the Department of Health and Home Affairs during the year ended 30th June, 1952.

## STAFF.

Dr. G. S. Hayes was appointed as Government Medical Officer, Brisbane, in addition to his position as Medical Officer in Charge of Enthetic Diseases.

Dr. E. M. Rathouse was appointed Medical Officer, Division of Tuberculosis.

Dr. P. R. Patrick was awarded an Overseas Travelling Fellowship by the National Health and Medical Research Council.

Mr. W. McNeil retired from the position of Chief Sanitary Inspector during the year, after 39 years with the Department. He rendered loyal and excellent service during this period and endeared himself to all members of the Department.

## INTRODUCTORY REMARKS.

A cable message was published in "The Courier-Mail" recently that Dr. Burnett Ham "who was appointed Commissioner of Public Health by the Queensland Government to cope with a bubonic plague outbreak in Brisbane and North Queensland" in 1900 had lectured to students of his old hospital. Dr. Ham furnished his first Annual Report in 1902 and it is interesting to trace the expansion of the Department during the past fifty years.

Dr. Ham was assisted by Dr. R. A. O'Brien as Health Officer. This gentleman later became Director of the Wellcome Physiological Research Laboratory at Beckenham, near London, and following his return to Australia in 1948 was attached to the Queensland Institute of Medical Research for a period of approximately two years. Departmental activities were directed to the disposal of wastes, protection of food and water supplies, despite the fact "*The Health Act of 1900*" made no provision for the latter, and the control of infectious diseases.

The high death rate of children pointed to the necessity for action to protect child life, and so the School Health Services came into being in 1911, followed by Maternal and Child Welfare in 1918. The Mental Service was brought into line with modern thought by the establishment of psychiatric clinics, while approval has been given for the building of

a neuropsychiatric clinic and other necessities in a modern mental service. The value of preventive medicine in industry and its bearing on industrial peace have been proven by the Division of Industrial Medicine. The campaign against tuberculosis has been stepped up with the creation of a Division of Tuberculosis and it has been demonstrated that tuberculosis is more prevalent in Queensland than was previously thought. With proper preventive measures and the co-operation of the public the disease will eventually be wiped out.

Despite our increased knowledge of preventive medicine, difficulties are being experienced which Dr. Ham met with fifty years ago. Some Local Authorities continue to advance the plea of "no money" as a reason for neglecting their sanitary obligations supporting their inertia by pointing out they have had practically no infectious disease. Likewise medical practitioners failed in those days to notify disease.

What of the future? Despite the fact that the infant mortality rate—the surest indication of the public health—has been reduced from 62.9 in 1910 to the favorable rate of 25.7 in 1952, we must continue to improve and expand the existing services. We must remember also that throughout the world people are demanding a comprehensive health service as a right. Queensland has proved that by co-operation with the medical profession an efficient hospital service can be given to the people. By continued co-operation between the Department, practising doctors, and the Local Authority, Queensland will have a health service second to none.

I would take this opportunity of recording my appreciation of the assistance given to me and to the Department by the British Medical Association during the past year.

## VITAL STATISTICS.

The population of Queensland at the end of 1951 was 1,219,606. The infantile mortality rate was 25.7 per thousand live births, an increase of 0.9 over last year. The increase is due to birth injuries which mostly occur under the age of 1 month, and are usually unavoidable, and to gastro-enteritis under the age of one year. It has been noted that breast-fed babies appear resistant to dysenteric organisms and every endeavour is made by the Division of Maternal and Child Welfare to induce mothers to continue breast-feeding their babies.



The maternal mortality rate was 1.18 per thousand live births, which is the lowest recorded in Queensland. The crude birth rate of 24.6 is the same as for 1950.

#### SECTION OF COMMUNICABLE DISEASE CONTROL.

The epidemic of poliomyelitis which commenced in October, 1950, continued in epidemic form until April, 1952, a period of eighteen months, the highest incidence in the country being in April, and in July in Brisbane. Until comparatively recently it was stated that poliomyelitis was a disease of the warm months, but in Brisbane the highest incidence was in mid-winter.

Much publicity has been given by newspapers to reports that a vaccine against poliomyelitis might be discovered for mass immunization within two years. Another report refers to the use of gamma globulin for passive immunization. I personally doubt the value of gamma globulin as a public health measure in Queensland as the immunity only lasts for six to eight weeks. While it may be valuable in a country where the duration of the epidemic is not more than three months, its use in Queensland where the epidemic lasts much longer is open to question. Much work has to be done before a vaccine is available and we shall be fortunate if such a vaccine is ready for use in five years.

The introduction of malignant tertian malaria to Darnley and Murray Islands is a matter of concern. It is presumed to have been introduced from New Guinea despite the endeavours of the Queensland Department of Native Affairs to prohibit New Guinea natives entering the islands of the Torres Strait.

This outbreak brings to mind the Cairns epidemic of 1942, which produced 531 cases. As a result of this, Sir Earle Page, the present Commonwealth Minister for Health, was invited by the late Right Hon. John Curtin to furnish him with a report on the Cairns position. Sir Earle recommended that complete drainage should be undertaken, covering all swamps in the Cairns area capable of breeding the *Anopheles* mosquito as this would eradicate the one endemic focus of malaria in Australia. Subsequently the Department of the Army, together with the American Army, and with the co-operation of the State Government and the Cairns City Council, drained the swamps by means of earth channels. At this time the importance of Cairns as a strategic jumping-off point for troops was appreciated, but all interest was lost by the Army once the troops moved off from Cairns.

It is recognised that temporary drains such as these are likely to become mosquito-breeding grounds, and for this reason the Cairns Council and the State Government were anxious to have the work made permanent. Approaches have been made to the Commonwealth over the years, but it is regretted that the only assistance that the Commonwealth is prepared to give is a contribution of £18,000 to a scheme which will cost hundreds of thousands of pounds.

Should war occur again, Cairns will again become a strategically important centre, and no doubt after another epidemic commences, the scheme will be completed because of the necessity to protect the troops.

#### HANSEN'S DISEASE.

Sulphone drugs and thiacetazone continue to produce good results and these drugs have been responsible for a changed outlook towards the disease.

The prefabricated huts for the new hospital at Burpengary, which were ordered some time ago, are expected to be shipped soon and should arrive in Queensland towards the end of the calendar year.

#### SECTION OF ENTHETIC DISEASES.

The incidence of venereal disease shows a further decrease, but I find it difficult to believe that all cases are being notified. Notification of disease is valueless unless required for a specific purpose, and venereal disease is one where, with the co-operation of patient and doctor, the Department can trace and treat the focus of infection.

The decrease is due to a fall in the notifications of gonorrhoea, but there has been a slight increase in the incidence of syphilis. In this disease, the patient has greater difficulty in observing symptoms and thus, being unaware of his infection, unconsciously infects others.

#### SECTION OF FOOD AND DRUGS.

The desirability of uniform standards and labelling for food and drugs is appreciated and the matter has been discussed by the National Health and Medical Research Council and Ministers for Health without any action being taken. Queensland has agreed to send representatives to a conference to discuss the question of legislation concerning standards of therapeutic substances.

The standards required in this State are of a high order and nothing should be done to lower them.

The National Health and Medical Research Council is collecting information in regard to variation of requirements for particular products, including labelling, and packaging standards, and the question will be further discussed at its next meeting.

The number of successful prosecutions for the adulteration of milk by the addition of water increased from 40 to 62, the main offenders being dairy farmers during the drought period. Two inspectors are employed in the metropolitan area policing the requirements of "The Milk-Sellers Regulations, 1938-1946" but the problem is more difficult in country areas as is seen by the fact that, while 4.3 per cent. of the Brisbane samples were adulterated, 10.6 per cent. of country samples examined had added water.

#### SECTION OF ENVIRONMENTAL SANITATION.

It is pleasing to know that there are Local Authorities who realise that good sanitation and civic pride go hand in hand, and in order to achieve this appoint their own health inspector. Unfortunately, the reverse is also seen; some Local Authorities who have more than one inspector have requested that they be allowed to dispense with the services of an inspector or that they be allowed to share an inspector with one or more Local Authorities. It will be found that these Local Authorities are usually not health conscious; they prefer



to allow the disposal of nightsoil in the backyard or by cesspits; they prefer to have house tanks as their water supply. Health inspectors, themselves, are often to blame for the position, as they fail to realise health education, not only of the people, but of their Council, is one of their functions. In this regard the inspectors have the assistance of the Queensland Health Education Council, which body has earned the commendation of most Local Authorities for the assistance given in the fight against disease.

#### DIVISION OF TUBERCULOSIS.

In the past tuberculosis was thought to be a disease of low incidence in Queensland. While this might be so compared with other States of Australia, it is more prevalent than was originally supposed. The increase in the number of notifications during the past three years is not an indication of an actual increase in prevalence of the disease, but is a result of cases being better notified, as notification is a necessary pre-requisite to the granting of a Tuberculosis Allowance. In addition, examination of contacts has been a factor in the increase. A still further increase in known cases should occur in the coming year because of the X-raying of all in-patients and out-patients at the Brisbane General Hospital and the Toowoomba Hospital, and the opening of the Chest Clinic.

Mass X-ray of residents of some State institutions has been carried out and arrangements have been made by the University of Queensland Union and the Waterside Workers' Union to have their members X-rayed early in September.

It should be remembered that it is the unknown cases which are mainly responsible for the spread of tuberculosis, and in spite of lack of beds it is essential they be discovered so that they can be taught the principles of hygiene. Foundations of the pre-fabricated buildings at Chermside have been prepared so as to be ready for the buildings which have left England. These beds will give limited relief only.

#### DIVISION OF INDUSTRIAL MEDICINE.

Both employer and employee continue to call in the services of the Director of this Division. Although there is power under Section 61 of the Health Acts to make Regulations, no such action has been taken as it is desired that anyone wishing for assistance shall feel that the advice tendered is on health grounds and not governed by law. The result of this policy has been that all parties have accepted the advice as unbiassed and this has been a factor in industrial peace as far as health questions are concerned.

#### DIVISION OF MATERNAL AND CHILD WELFARE.

Despite the fact the over-all number of nurses on the staff increased by five, the number of temporary sisters still causes concern as it is difficult to plan continuity of service.

The increase enabled four sub-centres to be opened, as well as the staffing of the Mothercraft Homes at Ipswich and Rockhampton.

The planning of the alterations of the building at Townsville has been commenced, and when these are completed this will bring the number of Mothercraft Homes outside the

metropolitan area to four. These Homes are for the purpose of treating babies who, because of feeding difficulties, are not thriving, and their establishment is strongly recommended by all authorities interested in infant welfare.

Their value is supported by the visiting medical officer at Toowoomba, who stated that of the eleven babies in the Toowoomba Home at that particular time, six would have died if the specialist treatment provided by the nursing staff were not available.

Institutional diarrhoea, which is a cause of concern throughout the world, is the subject of research by Dr. Singer of the Queensland Institute of Medical Research. An outbreak occurred in the Clayfield Home during the year and was investigated by him. The general opinion held as to the method of spread is that cross-infection occurs because of poor hygiene, the path of transmission being from an infected child to another child via the nurse. The hygiene at the Clayfield Home is of a high order and at the time of the epidemic routine examinations of rectal smears of babies were negative. As a result of the examination of rectal smears of the staff and resident mothers, Singer is of the opinion that most institutional epidemics of gastro-enteritis are spread from adults, and adults as well as the babies are now examined regularly to ascertain whether they are "carriers" of dysenteric organisms.

#### DIVISION OF SCHOOL HEALTH SERVICES.

Forty-five years ago, Dr. E. R. Row, of Thargomindah Hospital, referring to trachoma, stated: "I think the best means to eradicate the evil is to have the children examined periodically at school by a doctor, and the parents compelled to look after the children when at home. If children were debarred from attending school because of their bad eyes the school would soon be empty, as the majority of the children are so affected."

Dr. Row's suggestion regarding the appointment of ophthalmic officers was implemented in 1911. An appreciation of the value of hygiene and better diet, together with the treatment given to infected children, have controlled the disease and enabled the Wilson Ophthalmic Hostel to close in May as an institution for children suffering from trachoma.

Much has been written about fluorine in the control of dental caries. At the last meeting of the National Health and Medical Research Council a resolution was passed that "The Council, in view of the practice advocated by responsible American medical and dental authorities in respect of fluoridation of water as a factor in the control of dental caries, considers that the addition of fluoride to water supplies to be a reasonable and safe measure, provided the addition of this substance is carried out under strict supervision and scientific control to ensure that the percentage does not exceed accepted standards laid down by the State Health Departments. The use of this substance as a means of self medication is strongly condemned." Lady Mellanby when she visited Queensland advised us to hasten slowly in regard to its use.

Most authorities lay down one part per million as the amount of fluorine in water but it must be remembered that Queenslanders drink more water than people in cooler



climates, therefore the dosage required would need to be worked out by physiologists to prevent any side reactions through overdosing. It is interesting to note that school dentists have observed that the teeth of children in areas where fluorine is present in water have a lower incidence of dental caries.

#### DIVISION OF MENTAL HYGIENE.

Shortage of trained female staff in the Mental Service is a matter of concern. At the present time most of the untrained staff are assistants-in-nursing, few studying for their mental certificate. The shortage of applicants for positions as trainee nurses has also been experienced by general hospitals throughout the world.

In the case of the mental hospitals the position has been eased by the availability of New Australians but, unfortunately, language difficulties have precluded them from studying for the nurses' certificate. This means that there are no nurses coming on to fill vacancies on the trained staff. The position as far as trainees at general hospitals is concerned, is less acute due no doubt to the present economic position, and efforts will be made to interest girls who are unemployed to adopt mental nursing as a career.

Shortage of accommodation is also a problem as it has resulted in overcrowding with resultant difficulty of properly classifying patients. Good progress is reported in the building of the Charters Towers Hospital and the Jubilee Hospital at Dalby is to be used as a Home for persons whose degeneration of intellectual faculties is attributable to old age.

In order that the Mental Services of the State will be brought into line with modern psychiatric thought, approval has been given to a long-range plan to implement this. The relief afforded will enable better classification of patients.

A neuro-psychiatric hospital will be built on land already secured for the treatment of patients suffering from psychiatric conditions in their early stages, and an institution for the care and training of backward people will be established.

#### DIVISION OF LABORATORY SERVICES.

##### *Laboratory of Microbiology and Pathology.*

The unknown fevers of Queensland have been a field for research for many years. Mossman, Sarina, and Coastal fevers are diseases known to residents of North Queensland, all having similar symptoms. It is understandable that the diagnosis cannot be fully established clinically, as in many cases the causal organisms of these differently-named diseases belong to the same group and the diseases are in fact one and the same, while in other cases, although the causal organisms are different, the symptoms are the same. Dr. E. H. Derrick, the first Director of the Laboratory of Microbiology and Pathology, discovered "Q" Fever as a separate entity. He also found that most Sarina fevers were really patients suffering from scrub typhus.

It is fitting that this laboratory should carry on the work which Dr. Derrick, who is now Deputy Director of the Queensland Institute of Medical Research, commenced.

Since the establishment of the Field Station at Innisfail by the Queensland Institute of Medical Research, there has been co-operation between the Institute and the Laboratory staff who are responsible for the routine serological work. Already progress has been made as a large number of the patients investigated in North Queensland have been definitely diagnosed as suffering from diseases caused by members of the leptospiral group of organisms. *Leptospira canicola* has been recovered for the first time in Australia from two patients, while two other strains new to Australia, of which one might be new to the world, have been differentiated. This start is encouraging but much remains to be done. The cause of the disease in the remainder of the patients must be found, and the path of transmission, and source of infection must be worked out. Also co-operating with the field workers are officers of the Division of Industrial Medicine, and it is their duty to carry out preventive measures where indicated.

Equipment is coming to hand for the newly-established laboratory for the diagnosis of tuberculosis, and it is hoped it will commence to function within the next three months. A special study of tuberculosis laboratories of the United States of America was made by Dr. Tonge when in that country and the most modern equipment is being installed so that the latest methods for accurate laboratory diagnosis can be used.

##### *Government Chemical Laboratory.*

This laboratory plays an important part as a unit of the Department, as it is to the officers of this Section that the health inspectors submit specimens collected in the course of investigations. There is also close co-operation with the Laboratory of Microbiology and Pathology, as it is to the Government Chemical Laboratory that toxicological problems are submitted.

Attention was drawn last year to the tendency to add chemicals to food for various purposes. During the past year requests have been received to allow chemicals to be added to food, but the departmental attitude is that such requests should be refused unless it has been definitely proven that the agent to be added is non-toxic and then only if there is a good reason for the addition.

#### STATE SOCIAL SERVICE FELLOWSHIPS IN MEDICINE.

The system of State Social Service Fellowships in medicine, instituted in 1944, under which students are afforded financial assistance to undertake their studies on condition that they serve the Department in any part of the State for seven years after graduation, continues to show good results.

Three further medical graduates have become available, and are occupying positions at Peel Island, Thursday Island, and Alpha, whilst five more are at hospitals obtaining twelve months' hospital experience. Hospital positions at Barcaldine, Bowen, Collinsville, and Blackall to which Fellowship holders were allocated last year, continue to be held by these officers.



VITAL STATISTICS.

*Population.*—The estimated population of Queensland at 31st December, 1951, was 1,219,606, an increase of 28,361 (or 2.3 per cent.) for the year. The estimated population living in the Greater Brisbane Area was 453,660, being an increase of 9,010 during 1951. The population density per square mile is 1,179 persons in the Greater Brisbane Area, 1.14 persons for the rest of the State, and 1.82 persons for the whole of Queensland. There is considerable space and abundant national resources for further substantial population growth, and measures designed to attract people to settle in country areas should receive the support of all sections of the community. The provision of good medical services (both preventive and curative) to people in sparsely-populated areas of the State is a most important undertaking, and it is worth recording that Flying Doctor Services and the Ambulance Services (both land and aerial transport)

receive substantial Government subsidies. Medical and dental examinations of school children are State wide, and the Maternal and Child Welfare Services attend to babies in the most remote areas. The problem of retaining doctors and nurses in some of these small towns is not capable of easy solution, and the Flying Doctor and teams from base hospitals are providing medical attention to many small settlements. Perhaps an extension of these out-patient clinics is a reasonable compromise.

*Births.*—During the year 1951, 29,652 births were registered in Queensland, an increase of 624 over the previous year and the highest on record. The crude birth rate was 24.6, which was the same as in 1950. In 1951 there were 15,207 males and 14,445 females born, giving the masculinity rate of 105 males for every 100 females born, as has been the case for many years past. Table I. shows the crude birth rates of Queensland with those of other States and certain overseas countries.

TABLE I.  
CRUDE BIRTH RATE (PER 1,000 POPULATION).

—	1910.	1920.	1930.	1940.	1947.	1948.	1949.	1950.	1951.
Commonwealth of Australia ..	26.7	25.5	18.8	18.0	24.1	23.1	22.9	23.3	22.9
Queensland .. ..	<b>27.3</b>	<b>27.2</b>	<b>20.8</b>	<b>19.9</b>	<b>25.7</b>	<b>24.7</b>	<b>24.2</b>	<b>24.6</b>	<b>24.6</b>
New South Wales .. ..	27.8	26.1	20.6	17.8	23.2	22.2	22.1	22.2	21.7
Victoria .. ..	24.5	23.9	18.5	16.8	23.1	22.1	21.9	22.6	22.3
South Australia .. ..	26.5	24.7	17.4	16.7	25.2	24.1	23.8	24.7	24.3
Western Australia .. ..	28.0	24.7	21.4	19.4	25.6	25.1	25.4	25.5	25.4
Tasmania .. ..	29.2	27.3	21.7	20.8	27.7	26.4	26.1	25.7	25.1
New Zealand .. ..	26.2	25.1	18.8	21.2	26.4	25.5	24.9	24.6	24.4
United Kingdom .. ..	25.0	25.4	16.8	14.6	20.7	18.1	17.0	16.1	15.9
United States of America ..	n	23.7	18.9	17.9	25.7	24.1	24.0	23.4	24.3
Canada .. ..	n	29.4	23.9	21.5	28.6	27.0	26.9	26.5	27.1

n Not available.

The natural increase (excess of births over deaths) for 1951 was 18,547, being equal to an increase of 1.6 per cent. of the population. Of the three major States, Queensland has the highest crude birth rate.

*Deaths.*—For the year 1951, deaths from all causes totalled 11,105, giving a crude death rate

(deaths per 1,000 mean population) of 9.2, which is higher than for the previous two years, but still below the crude death rate of the Commonwealth of Australia. Table II. compares the crude death rates of Queensland, other States and certain overseas countries since 1910.

TABLE II.  
CRUDE DEATH RATE (PER 1,000 POPULATION).

—	1910.	1920.	1930.	1940.	1947.	1948.	1949.	1950.	1951.
Commonwealth of Australia ..	10.4	10.5	8.6	9.7	9.7	10.0	9.5	9.6	9.7
Queensland .. ..	<b>9.7</b>	<b>10.7</b>	<b>8.2</b>	<b>9.0</b>	<b>9.2</b>	<b>9.3</b>	<b>8.9</b>	<b>8.8</b>	<b>9.2</b>
New South Wales .. ..	9.9	10.1	8.4	9.4	9.5	10.0	9.4	9.6	9.6
Victoria .. ..	11.5	11.1	8.9	10.7	10.4	10.4	10.3	10.1	10.3
South Australia .. ..	10.1	10.4	8.5	9.5	9.6	10.3	9.5	9.6	10.0
Western Australia .. ..	10.1	10.3	8.8	9.5	9.4	9.1	9.0	9.1	9.1
Tasmania.. ..	11.1	9.7	9.8	9.9	9.2	9.6	8.8	8.7	8.8
New Zealand .. ..	9.7	10.2	8.6	9.2	9.4	9.1	9.1	9.3	9.6
United Kingdom .. ..	14.0	12.9	11.7	14.0	12.1	10.9	11.7	11.7	12.6
United States of America ..	15.0	13.1	11.3	10.7	10.1	9.9	9.7	9.6	9.7
Canada .. ..	n	13.7	10.7	9.8	9.4	9.3	9.2	9.0	9.0

n Not available.

Table III. shows the causes of death of residents of Queensland during 1951. Diseases of the heart still occupy first place as a cause of death, other important causes being vascular lesions affecting the nervous system, and cancer. Deaths from diphtheria increased from 8 in 1950 to 12 in 1951. Because of the presence of a severe outbreak of poliomyelitis in Queensland, deaths from this cause increased from 11 in

1950 to 100 in 1951. Deaths from complications of pregnancy, childbirth, and the puerperium continue to decline, giving a record low maternal mortality rate of 1.18. Deaths from motor vehicle traffic accidents increased from 212 in 1950 to 267 in 1951, whilst deaths from other accidents (falls, drowning, and other types of accident) increased from 467 to 544.



TABLE III.  
SHOWING CAUSES OF DEATH OF RESIDENTS OF QUEENSLAND, 1951.

Causes of Death.	Males.	Females.	Total.
Tuberculosis of Respiratory System .. .. .	175	45	220
Tuberculosis, other.. .. .	3	3	6
Diphtheria .. .. .	6	6	12
Whooping Cough .. .. .	1	4	5
Tetanus .. .. .	8	6	14
Acute Poliomyelitis .. .. .	65	35	100
Measles .. .. .	4	5	9
Other Infectious and Parasitic Diseases .. .. .	81	35	116
Malignant Neoplasms .. .. .	785	618	1,403
Neoplasms, Benign and Unspecified .. .. .	32	39	71
Hay Fever and Asthma .. .. .	39	23	62
Diabetes Mellitus .. .. .	44	81	125
Other Allergic, Endocrine System, Metabolic and Nutritional Diseases .. .. .	16	26	42
Pernicious and other Hyperchromic Anaemias .. .. .	9	15	24
Other Diseases of the Blood and Blood-forming Organs .. .. .	10	17	27
Mental, Psychoneurotic and Personality Disorders .. .. .	81	25	106
Vascular Lesions affecting Central Nervous System .. .. .	583	704	1,287
Other Disorders of the Nervous System and Sense Organs .. .. .	103	71	174
Diseases of Heart .. .. .	1,733	963	2,696
Hypertensive Disease .. .. .	336	322	658
Other Diseases of Circulatory System .. .. .	128	104	232
Influenza .. .. .	29	18	47
Lobar Pneumonia .. .. .	69	46	115
Broncho-pneumonia .. .. .	104	110	214
Other and Unspecified Pneumonia .. .. .	36	29	65
Bronchitis .. .. .	83	42	125
Other Diseases of Respiratory System .. .. .	107	36	143
Diseases of Stomach and Duodenum .. .. .	83	22	105
Appendicitis .. .. .	33	10	43
Diseases of Liver, Gallbladder and Pancreas .. .. .	68	65	133
Other Diseases of Digestive System .. .. .	114	106	220
Nephritis and Nephrosis .. .. .	182	194	376
Diseases of Male Genital Organs .. .. .	132	..	132
Other Diseases of Genito-Urinary System .. .. .	69	61	130
Deliveries and Complications of Pregnancy, Childbirth, and the Puerperium .. .. .	..	35	35
Diseases of the Skin and Cellular Tissue .. .. .	7	8	15
Diseases of the Bones and Organs of Movement .. .. .	14	15	29
Congenital Malformations .. .. .	79	62	141
Intra-Cranial and Spinal Injury at Birth .. .. .	44	30	74
Other Birth Injury.. .. .	29	26	55
Post-Natal Asphyxia and Atelectasis .. .. .	38	21	59
Infections of Newborn .. .. .	20	17	37
Immaturity Unqualified .. .. .	80	73	153
Other Diseases Peculiar to Early Infancy .. .. .	62	34	96
Senility without mention of Psychosis .. .. .	87	96	183
Symptoms Referable to Systems or Organs .. .. .	11	4	15
Ill-defined and Unknown Causes .. .. .	22	10	32
Motor Vehicle Traffic Accidents .. .. .	225	42	267
Accidental Falls .. .. .	94	102	196
Accidental Drowning and Submersion .. .. .	53	12	65
Other Accidents .. .. .	220	63	283
Suicide and Self-inflicted Injury .. .. .	97	23	120
Homicide and Injury Purposely Inflicted by Other Persons .. .. .	8	5	13
Total from All Causes .. .. .	6,541	4,564	11,105

*Marriages.*—Registration of marriages during the year numbered 10,814, compared with 10,304 in 1950. The marriage rate was 9.0 per thousand mean population, compared with 8.7 in 1950.

Minors married during the year numbered 4,065, of whom 700 were males and 3,365 were females.

TABLE IV.  
INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR PER 1,000 LIVE BIRTHS).

—	1910.	1920.	1930.	1940.	1947.	1948.	1949.	1950.	1951.
Commonwealth of Australia ..	74.8	69.1	47.2	38.4	28.5	27.8	25.3	24.5	25.2
Queensland .. .. .	62.9	63.2	40.0	35.3	30.8	28.0	24.7	24.8	25.7
New South Wales .. .. .	74.7	69.4	49.8	39.0	29.8	30.3	27.3	27.1	26.3
Victoria .. .. .	76.9	73.7	46.6	39.5	26.2	23.9	21.9	20.1	22.6
South Australia .. .. .	70.2	67.3	48.4	35.5	24.3	29.7	27.7	24.0	24.5
Western Australia .. .. .	78.2	66.0	46.7	44.2	30.9	25.6	26.4	27.1	28.7
Tasmania.. .. .	101.7	65.5	50.6	35.2	27.3	27.7	23.9	23.8	26.6
New Zealand .. .. .	67.7	50.6	34.5	30.2	25.0	21.9	23.7	23.0	22.8
United Kingdom .. .. .	105.0	82.0	63.0	61.0	43.5	36.0	34.0	31.0	31.0
United States of America .. .. .	n	85.8	64.6	47.0	32.0	32.0	31.0	29.0	29.0
Canada .. .. .	n	n	89.3	56.4	45.5	44.0	43.0	41.0	n

n Not available.



TABLE V.

BIRTH, INFANT MORTALITY, MATERNAL MORTALITY, AND REPRODUCTION RATES, QUEENSLAND AND AUSTRALIA.

							Crude Birth Rate.		Infant Mortality Rate.		Maternal Mortality Rate. (1)		Gross Reproduction Rate. (2)		Net Reproduction Rate. (3)	
							Queens-land.	Aus-tralia.	Queens-land.	Aus-tralia.	Queens-land.	Aus-tralia.	Queens-land.	Aus-tralia.	Queens-land.	Aus-tralia.
1901	..	..	..	..	..	..	28.5	27.2	101.9	103.6	4.15a	3.77a	n	1.74	n	1.39
1911	..	..	..	..	..	..	27.6	27.2	65.4	68.5	5.77	5.03	n	1.71	n	1.42
1921	..	..	..	..	..	..	26.7	25.0	54.1	65.7	5.31	4.72	n	1.51	n	1.31
1931	..	..	..	..	..	..	19.3	18.2	36.6	42.1	5.07	5.49	n	1.14	n	1.03
1934	..	..	..	..	..	..	18.2	16.4	40.6	43.6	4.61	5.76	n	1.03	n	0.94
1939	..	..	..	..	..	..	20.0	17.7	35.5	38.2	5.21	4.09	1.28	1.08	1.16	1.00
1940	..	..	..	..	..	..	19.9	18.0	35.3	38.4	4.70	4.08	1.25	1.10	1.15	1.02
1941	..	..	..	..	..	..	20.8	18.9	39.1	39.7	4.28	3.64	1.30	1.15	1.19	1.07
1942	..	..	..	..	..	..	20.4	19.1	34.8	39.5	3.97	3.59	1.26	1.16	1.16	1.07
1943	..	..	..	..	..	..	22.2	20.7	37.8	36.3	3.83	3.33	1.39	1.26	1.25	1.16
1944	..	..	..	..	..	..	23.1	21.0	31.3	31.3	3.02	2.85	1.45	1.29	1.32	1.20
1945	..	..	..	..	..	..	24.8	21.8	29.8	29.4	2.47	2.15	1.53	1.34	1.39	1.24
1946	..	..	..	..	..	..	24.8	23.7	29.3	29.0	2.26	1.85	1.55	1.46	1.42	1.33
1947	..	..	..	..	..	..	25.7	24.1	30.8	28.5	1.62	1.87	1.64	1.49	1.54	1.36
1948	..	..	..	..	..	..	24.7	23.1	28.0	27.8	1.47	1.40	1.60	1.45	1.51	1.33
1949	..	..	..	..	..	..	24.2	22.9	24.7	25.3	1.44	1.21	1.57	1.46	1.49	1.33
1950	..	..	..	..	..	..	24.6	23.3	24.8	24.5	1.45	1.09	1.61	1.49	1.52	1.42
1951	..	..	..	..	..	..	24.6	22.9	25.7	25.2	1.18	n	1.64	n	1.55	n

a Figures for 1901 not available. Figures shown are for 1902.

n Not available.

(1) *Maternal Mortality Rate*.—Deaths from puerperal causes per 1,000 live births.(2) *Gross Reproduction Rate*.—Represents the number of female children who would be born on the average to women living right through the child bearing years, if the conditions on which the rate is based continue.(3) *Net Reproduction Rate*.—Is the gross reproduction rate corrected for deaths of females from birth to the end of the child bearing period. It is a more accurate index than the gross reproduction rate. Unless it exceeds unity the population is not replacing itself.

Tables IV. and V. show the infant mortality rate, birth rate, maternal mortality rate, and gross and net reproduction rate of Queensland and Australia at various periods since 1901. It will be noted that the infantile mortality rate increased slightly (from 24.8 in 1950 to 25.7 in 1951), due to more deaths from neonatal causes and infantile diarrhoea. On the other hand, the gross and net reproduction rates were the highest on record, indicating that the population is more than replacing itself, whilst the maternal mortality rate was the lowest on record.

The statistics given above indicate that this State has a fairly high birth rate, a satisfactory infantile mortality rate (capable of further reduction), a low crude death rate, and very good reproduction rate. Queensland is a healthy State, and in spite of sparse population

living in a huge area, of which more than half is tropical, its vital statistics compare more than favourably with the older and more closely settled southern States.

Features of the vital statistics for 1951 are—

- (i.) The high birth rate of the post war years is being maintained and is higher than that in most other Australian States. Births during 1951 were the highest on record.
- (ii.) The crude death rate of 9.2 was below the Australian average.
- (iii.) The infantile mortality rate increased slightly during the year.
- (iv.) The maternal mortality rate was the lowest on record.
- (v.) The gross and net reproduction figures were the highest on record.

DIVISION OF PUBLIC HEALTH SUPERVISION.

Deputy Director-General of Health and Medical Services: D. W. JOHNSON, M.B., B.S.  
(Syd.), D.T.M. & H. (Syd.).  
Chief Inspector of Food and Drugs: C. M. CATO.  
Chief Sanitary Inspector: W. D. PRYOR.  
Secretary to Director-General of Health and Medical Services: T. O'SHEA,  
M.R.San.I.  
Welfare Officer: Mrs. V. WILLS.

Inspectors in charge of District Offices:  
Cairns: B. M. KEEFE  
Rockhampton: R. WOODLEY  
Townsville: H. P. LOWES  
Toowoomba: C. J. MURRAY  
Mackay: R. A. BURKE

SECTION OF COMMUNICABLE DISEASE CONTROL.

Tables VI., VII., and VIII. show the incidence of communicable and notifiable diseases in Queensland for the calendar year 1951 and for the fiscal year 1951-52. Some of these diseases merit further comment.

TABLE VI.  
COMMUNICABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY, 1951, TO 30TH JUNE, 1952.  
METROPOLITAN AREA (POPULATION AT 1ST JULY, 1951—450,300).

Diseases.	Months.												Total 1951- 1952.
	1951.						1952.						
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	
Anchylostomiasis ..	..	..	..	..	..	..	1	..	..	..	..	..	1
Anthrax .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bilharziasis .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cholera .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coastal Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	20	11	18	39	27	47	32	9	11	30	31	11	286
Diphtheria .. ..	12	1	3	6	3	4	8	3	6	12	16	14	88
Dysentery, Amoebic	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery, Bacillary	4	11	2	14	6	9	17	34	25	29	50	22	223
Encephalitis Lethar- gica .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erythema Nodosa*	..	..	..	..	..	..	..	..	..	..	..	..	..
Filariasis .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lead Poisoning ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Leprosy .. ..	..	..	..	..	..	..	..	..	..	1	..	..	1
Leptospirosis (Weil's Disease, Parawell's Disease, Seven-day Fever) .. ..	..	..	..	..	1	..	1	..	1	..	1	1	5
Malaria .. ..	2	2	1	2	..	3	2	..	..	..	1	..	13
Meningitis, Cerebro- spinal .. ..	1	3	..	7	1	..	..	..	..	..	..	1	13
Mossman Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague, Bubonic or Oriental .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pleural Effusion*	..	..	..	..	..	..	..	..	..	..	..	1	1
Poliomyelitis, Acute Anterior .. ..	60	24	9	10	16	40	16	14	3	5	3	2	202
Puerperal Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Pyrexia ..	..	..	..	..	..	..	..	..	4	..	..	..	4
Q Fever* .. ..	..	..	..	..	..	..	..	..	2	..	..	..	2
Relapsing Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rubella .. ..	..	1	2	..	..	2	1	..	..	..	1	..	7
Sarina Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet Fever or Scarlatina .. ..	11	8	8	11	7	10	4	5	6	2	4	41	117
Smallpox (including Amaas or Alastrim)	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis (all forms) .. ..	46	42	44	44	37	20	25	36	42	29	41	47	453
Tetanus .. ..	2	1	..	1	1	..	..	..	3	4	2	1	15
Typhoid Fever (in- cluding Para- typhoid Fevers) ..	2	..	..	..	..	..	..	..	4	..	1	..	7
Typhus Fever (Scrub, Tick, Murine) ..	..	1	..	..	..	..	1	1	2	..	1	2	8
Undulant (Malta) Fever .. ..	..	1	1	..	..	..	..	..	..	..	1	1	4
Yellow Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals .. ..	160	106	88	134	99	135	108	102	109	112	153	144	1,450

\* Declared to be a notifiable disease under the Health Acts, with respect to the whole of Queensland, on January 10th, 1952, vide Government Gazette, 12-1-52, No. 8, page 48.



TABLE VII.  
COMMUNICABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY, 1951, TO 30TH JUNE, 1952.  
EXTRA-METROPOLITAN AREA (POPULATION AT 1ST JULY, 1951—760,940).

Diseases.	Months.												Total 1951- 1952.
	1951.						1952.						
	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	
Anchylostomiasis ..	2	3	..	1	2	5	3	..	4	..	1	13	34
Anthrax .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bilharziasis .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cholera .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coastal Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	1	4	7	6	2	6	4	9	9	12	3	4	67
Diphtheria .. ..	5	2	9	2	4	4	7	..	5	5	18	14	75
Dysentery, Amoebic	..	..	..	..	..	..	..	..	..	..	..	2	2
Dysentery, Bacillary	..	..	3	..	..	1	2	5	3	2	7	4	27
Encephalitis Lethar- gica .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erythema Nodosa* ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Filariasis .. ..	..	..	2	..	..	..	..	..	..	..	..	..	2
Lead Poisoning ..	..	..	..	..	..	1	..	..	1	..	..	..	2
Leprosy .. ..	1	..	..	..	..	..	1	..	..	..	..	..	2
Leptospirosis (Weil's Disease, Paraweil's Disease, Seven-day Fever) .. ..	2	5	1	5	6	2	6	4	4	6	6	14	61
Malaria .. ..	..	..	..	1	1	1	1	..	1	..	..	1	6
Meningitis, Cerebro- spinal .. ..	3	3	..	..	..	1	1	..	2	1	3	4	18
Mossman Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague, Bubonic or Oriental .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pleural Effusion* ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poliomyelitis, Acute Anterior .. ..	33	34	9	2	13	12	14	13	8	8	6	5	157
Puerperal Fever ..	..	1	1	1	1	..	..	1	..	2	1	..	8
Puerperal Pyrexia ..	1	1	1	1	..	..	3	2	1	1	1	1	13
Q Fever* .. ..	..	..	..	..	..	..	..	1	1	..	1	1	4
Relapsing Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rubella .. ..	..	1	..	2	2	1	..	..	..	..	..	..	6
Sarina Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet Fever or Scar- latina .. ..	12	11	5	5	7	5	4	13	5	5	1	7	80
Smallpox (including Amaas or Alastrim)	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis (all forms)	28	25	33	36	22	27	23	36	30	21	21	24	326
Tetanus .. ..	..	1	..	2	1	1	4	3	2	2	2	1	19
Typhoid Fever (in- cluding Paratyphoid Fever) .. ..	..	..	1	..	1	..	2	..	2	1	..	..	7
Typhus Fever— Scrub .. ..	5	1	..	4	1	1	5	5	3	4	2	3	34
Tick .. ..	..	..	..	..	..	..	..	..	1	1	..	..	2
Murine .. ..	1	3	..	..	2	..	..	1	1	..	1	1	10
Undulant (Malta) Fever .. ..	..	..	..	..	..	1	1	2	2	1	1	..	8
Yellow Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	94	95	72	68	65	69	81	95	85	72	75	99	970

\* Declared to be a notifiable disease under the Health Acts with respect to the whole of the State of Queensland, on January 10th, 1952, *vide Government Gazette*, 12-1-52, No. 8, page 43.

TABLE VIII.  
NOTIFIED INCIDENCE OF COMMUNICABLE DISEASES IN QUEENSLAND (EXCLUSIVE OF VENEREAL DISEASES),  
SECTION 29 OF "THE HEALTH ACTS, 1937-1949," DURING THE CALENDAR YEAR 1951.

Disease.	Cases Reported on Prescribed Form.			
	Metropolis.	Outside Areas.	Total Whole State, 1951.	Total Whole State, 1950.
Anchylostomiasis .. .. .	3	44	47	62
Anthrax .. .. .	..	..	..	1
Bilharziasis .. .. .	..	..	..	..
Coastal Fever .. .. .	..	3	3	..
Cholera .. .. .	..	..	..	..
Diphtheria .. .. .	67	69	136	172
Diarrhoea (Infantile) .. .. .	266	32	298	167
Dysentery, Amoebic .. .. .	1	..	1	2
Dysentery, Bacillary .. .. .	129	15	144	244
Encephalitis Lethargica .. .. .	1	5	6	4
Erythema Nodosa* .. .. .	..	..	..	..
Filariasis .. .. .	..	2	2	2
Lead Poisoning .. .. .	1	1	2	2
Leprosy .. .. .	1	1	2	1
Leptospirosis (including Weil's Disease, Paraweil's Disease, Seven-day Fever) .. .. .	3	84	87	55
Malaria .. .. .	21	7	28	24
Meningitis, Cerebro-spinal .. .. .	16	19	35	44
Mossman Fever .. .. .	..	..	..	2
Plague, Bubonic or Oriental .. .. .	..	..	..	..
Pleural Effusion* .. .. .	..	..	..	..
Poliomyelitis, Acute Anterior .. .. .	338	653	991	106
Puerperal Fever .. .. .	..	6	6	2
Puerperal Pyrexia .. .. .	5	8	13	17
Q Fever* .. .. .	..	..	..	..
Relapsing Fever .. .. .	..	..	..	..
Rubella .. .. .	5	7	12	6
Sarina Fever .. .. .	..	..	..	..
Scarlet Fever or Scarlatina .. .. .	121	135	256	446
Smallpox (including Amaas or Alastrim) .. .. .	..	..	..	..
Tetanus .. .. .	11	11	22	35
Tuberculosis (all forms) .. .. .	397	301	698	594
Typhoid Fever (including Paratyphoid Fevers) .. .. .	6	4	10	9
Typhus Fever (including Rural and Urban Forms, and Japanese River Fevers) .. .. .	4	47	51	53
Undulant (Malta) Fever .. .. .	4	3	7	4
Yellow Fever .. .. .	..	..	..	..
Totals .. .. .	1,400	1,457	2,857	2,054

\*Declared to be a notifiable disease under the Health Acts, with respect to the whole of Queensland on January 10th, 1952 *vide* Government Gazette 12/1/52, No. 8, page 48.



It is frequently stated that the communicable diseases of man are declining in western communities with a good standard of living and environmental hygiene. Credit for the decline has been given to many features of modern life that were not present a generation ago, and better nutrition, a higher standard of housing, increased bodily cleanliness, increased awareness of methods of prevention by the public and applied immunology have had their share of credit.

It is pertinent to survey the field of communicable diseases and see how true is the statement that they have declined. In the first place, not all communicable diseases are notifiable in this State, hence no actual figures exist for comparing communicable diseases such as coryza, upper respiratory tract infections, measles, chicken pox and whooping cough. All of the diseases mentioned except whooping cough, are

probably as prevalent today as they were fifty years ago, though better nutrition, more intelligent home care and antibiotics have diminished their severity. On the other hand, the incidence and mortality of whooping cough have materially declined.

Excluding coastal fever and Mossman fever, which are not definite diseases, some thirty-one diseases are notifiable in this State. Of these only diphtheria, infantile diarrhoea, bacillary dysentery, leprosy, leptospirosis, meningitis, poliomyelitis, puerperal pyrexia (and puerperal fever), scarlet fever, typhoid fever, tuberculosis and typhus fever, are endemic to any extent in Queensland.

How has the incidence of these diseases altered in twenty years? The average incidence for each of the last two decades is set out in Table IX.

TABLE IX.

SHOWING AVERAGE ANNUAL NOTIFICATIONS FOR CERTAIN INFECTIOUS DISEASES FOR THE DECADES 1900 TO 1949, TOGETHER WITH NOTIFICATIONS FOR THESE DISEASES DURING 1951.

Period.	Diphtheria.	Infantile. Diarrhoea.	Bacillary Dysentery.	Leprosy.	Lepto- spiro- sis.	Scarlet Fever.	Typhoid.	Tuberculosis.	Typhus.
1900-09 ..	271	<i>a</i>	<i>b</i>	2	<i>c</i>	192 <i>d</i>	883	136 <i>d</i>	<i>b</i>
1910-19 ..	322	<i>a</i>	<i>b</i>	3	<i>c</i>	304	1,021	370	<i>b</i>
1920-29 ..	342	<i>a</i>	<i>b</i>	5	<i>c</i>	470	351	402	<i>b</i>
1930-39 ..	1,003	<i>a</i>	2	8	21	588	99	257	28
1940-49 ..	460	<i>a</i>	49	10	15	525	41	445	64
1951 ..	137	298	144	2	87	256	10	698	51

*a* Notifiable only since 1949.

*b* Not accurately available.

*c* Notifiable only since 1935.

*d* Notifiable only since 1904.

Diphtheria has shown a marked and progressive decline. Although the history of diphtheria in man has been characterised by periods of waxing and waning incidence, the present decline is so definite that it is impossible to disregard active immunization as a substantial factor responsible for the present low incidence. Bacillary dysentery has probably been much more common in the past than it is today. The present increase in notifications is due to better diagnosis and better notification of the disease. No one familiar with the gastroenteritis wards of children's hospitals filled regularly every summer can deny that this disease at any rate is not the scourge of children that it was twenty or thirty years ago.

Leprosy has not declined significantly, but is not now a serious problem in Queensland.

Leptospirosis, an apparent new disease, was first diagnosed in Queensland eighteen years ago. Since then, surveys have shown that it occurs not only in sugar cane cutters, but is widely endemic in areas where people come in contact with rats, cattle, pigs, and possibly dogs.

In Queensland as in other parts of the world, scarlet fever has shown no real decline in morbidity, but it has become milder, and the widespread distribution of the scarlet fever streptococcus in people with good health or with only a sore throat makes control of scarlet fever a difficult problem, particularly in schools. Typhoid is becoming rarer, but can occur even in sewered areas from time to time. Tuberculosis notifications have increased, but the increase is entirely due to better reporting and

to more exact diagnosis. There is every reason to believe that the true incidence of tuberculosis in Queensland has declined substantially in twenty years.

Typhus (scrub, murine and tick) has always been present in this State, and probably had its highest incidence when jungle was being cleared for cane crops in North Queensland in the early years of the present century. Here again, laboratory methods of diagnosis and better reporting have resulted in an increase of notifications, which does not reflect the true picture.

Poliomyelitis has not declined—in fact, the disease is now attacking more people over a wider range of age groups than ever before.

Notification of infectious diseases is a valuable procedure, provided its limitations are kept in mind and the number of notifications is not regarded as an absolute index of true incidence. Some diseases are better reported than others, and reporting becomes better as diagnostic facilities become available in all parts of the State.

Looking at the infectious diseases as a whole, however, the prospects are reassuring. However, upper respiratory tract infections are probably as common as ever, and scarlet fever has not declined. Poliomyelitis is more prevalent, the acute intestinal infections are definitely less, and the incidence of tuberculosis has fallen. Diphtheria is a rapidly declining disease. Preventive medicine has reason to be gratified at the results achieved.



What of the future and in what direction should a public health department extend its activities so that the population it serves can be kept healthy? Should one turn to the diseases which cause most morbidity (such as upper respiratory tract infections, arthritis, diabetes, duodenal ulcer) or to those diseases, such as cancer and degenerative disease of the heart and blood vessels, which today take such a toll of human life? There is a tremendous demand for public hospital accommodation, and it is paradoxical but true, that never has our population been so healthy, but never has the demand for hospital beds been so heavy and sustained. It is logical, then, to ascertain the most common or preventable causes of admission to public hospitals in Queensland. The latest available figures are for 1950, and these show that the ten most frequent causes of admission to public hospitals were as follows:—

	Admissions.
1. Automobile accidents, violent and other accidental causes .. ..	16,371
2. Diseases of Buccal Cavity, Pharynx and Tonsils .. ..	14,578
3. Diseases of Nervous System and Sense Organs .. ..	9,473
4. Diseases of Genito-urinary System .. ..	8,580
5. Infectious and Parasitic Diseases ..	8,471
6. Diseases of Skin, Bone and Organs of Movement .. ..	7,987
7. Diseases of Heart and Circulatory System .. ..	7,719
8. Bronchitis and Pneumonia ..	7,024
9. Diseases of Digestive System ..	6,338
10. Diseases of Pregnancy .. ..	5,027

What can preventive medicine do to diminish admissions from these causes? The most preventable of all diseases are accidents, where both cause and prevention are quite clear-cut. Automobile accidents accounted for 8 per cent. of all accidents requiring admission to hospital, and courtesy, care and common sense will do much to reduce these. Adequate safeguards in industry, and proper observance of these safeguards, can diminish industrial accidents. Accidents in the home—such as burns, scalds, falls and electrical accidents—are capable of great reduction. Perhaps accidents should be made notifiable so that inquiry can be made into the causes, and preventive measures advised once the causes are known. Some communities already notify accidents, but all admit that freedom from accidents is largely a personal matter. Some people have more accidents than others—for various reasons, they are accident prone.

During 1950, deaths from accidents totalled 679, occupying fourth position after diseases of the heart, cancer and vascular diseases of the brain. Our national attitude of complacency on deaths and injuries from accidents, should be modified in the light of these figures. Most accidents are preventable, and should be prevented. Some day we, as a nation, will realise that accidents are a serious medical, social and economic problem.

The large number of admissions due to diseases of the mouth and tonsils may surprise some. The tonsils and adenoids are still apparently removed very frequently, and it would be interesting to follow up a series of such cases, as has been done in some countries,

to see whether substantial improvement in the patient's health followed removal of tonsils and adenoids.

Admissions from disease of the nervous system are high, and are likely to increase. Mental sickness (both psychosis and neurosis), will always be present in an age of insecurity and stress. If by early treatment of mental disorders, psychiatrists can prevent the development of serious disorder and restore the patient to his place in the community as a sound economic unit, our expenditure on psychiatric clinics and psychiatric units in public hospitals will be well worth while. It is earnestly hoped that psychiatry will be able to justify its claims in this respect.

Infectious diseases of various kinds are responsible for nearly 7 per cent. of admissions to public hospitals. Tuberculosis, diphtheria, whooping cough, malaria, typhoid and the acute gastro-enteric diseases are preventable, and are declining, but diseases such as measles, scarlet fever, influenza, pneumonia and bronchitis are largely unchecked, though antibiotics have resulted in a decrease in mortality.

Modern therapy and immunology have presented certain of the infectious diseases with a real problem—they cannot infect a properly immunized person, and antibiotics are available to kill the organisms when they do succeed in invading the human body. Burnet, discussing this aspect, says, “It is well to bear in mind that the presentation of an unprecedented situation to any organism may result in an unprecedented response.” Already use (or misuse) of antibiotic drugs is reflected in an increase in resistance to antibiotics of many pathogenic organisms by a process of adaptation. Similarly, diphtheria may find a way to spread in immunized communities, as it did fifty years ago, when no one was actively immunized, whilst scarlet fever and tuberculosis may meet the threat to their existence by increasing in virulence. The changing picture of infectious diseases will bear close observation to note any change in behaviour of the causative organisms, and to counter that change by action based on sound understanding of the nature of changed behaviour.

Some individual communicable diseases merit further comment:

*Diphtheria.*—Notifications of diphtheria totalled 163, of which 88 lived in the Greater Brisbane Area, as compared with 143 (60) in 1950-51 and 186 (82) in 1949-50.

Age groupings of these 163 patients are:				
Less than 1 year .. ..	..	..	..	4
1 to 4 years .. ..	..	..	..	55
5 to 9 years .. ..	..	..	..	61
10 to 14 years .. ..	..	..	..	10
15 to 24 years .. ..	..	..	..	11
25 to 34 years .. ..	..	..	..	12
Over 34 years .. ..	..	..	..	10
				<hr/> 163 <hr/>

Over 70 per cent. of patients were less than 10 years of age, and 3 per cent. were less than 1 year old. Sex distribution in the children was approximately equal, but females predominated in the 33 patients who were more than 14 years of age.



Previous immunization histories of most of these patients are known. In the metropolitan area, 30 of 88 patients gave a history of immunization, although many parents when questioned were vague about dates and number of injections. Of 75 extra-metropolitan cases, 8 were immunized, and 6 gave a doubtful history of immunization. Therefore, about 25 per cent. of cases had previously been immunized. Of the extra-metropolitan cases, 2 had been immunized over 15 years ago, 2 more than five years ago, and 4 less than 5 years ago. One of these patients died—a rare event worth recording. This patient was a girl six years of age, who developed pharyngeal diphtheria in November, 1951. She died and a post mortem examination confirmed the clinical diagnosis of diphtheria. The child had received three injections of formol toxoid in 1947, but had had no booster dose. She probably was a non-reactor and was one of the few individuals who fail to react to active immunization whatever the reagent.

This Department now recommends P.T.A.P. as the immunizing agent of choice, rather than A.P.T. or formol toxoid. A booster dose at or before school entry is also advised. With the wide adoption of P.T.A.P. and a booster dose, diphtheria incidence must decline.

*Bacillary Dysentery and Infantile Diarrhoea.*—These two closely related diseases are best considered together. Of 353 notifications of infantile diarrhoea, 286 were received from the metropolitan area. Corresponding figures for bacillary dysentery were 250 and 223. Exact diagnosis is possible in the city, whereas in country districts, laboratory facilities are either not used or are not available to the same extent. Chief organism isolated was *Shigella sonnei*, but early this year, alpha and beta coli infections appeared in children's institutions. The Queensland Institute of Medical Research is performing valuable work in following up patients and in examining samples from the staff and patients of three institutions to which babies are admitted.

*Leptospirosis.*—The reports of the Division of Industrial Hygiene and the Laboratory of Micro-Biology and Pathology, record progress of investigations into the epidemiology of leptospirosis in Queensland, and it is expected that the joint investigations now being made will add considerably to our knowledge of this group of diseases. Notifications totalled 66, of which 61 were from country districts—mainly the cane growing areas of North Queensland. Several new strains of pathogenic leptospira have been isolated from patients in North Queensland, but much work must be done before we can be confident that we know all the aspects of leptospirosis in Queensland.

*Malaria.*—The 19 patients notified as having malaria all contracted their infection outside Australia. No case of malaria infected within the State has been reported since 1946, when a patient at Cairns developed the disease. *Anopheles punctulatus farauti*, a potent vector of malaria breeds in coastal swamps north of the 19th parallel of latitude, and the Government and local authorities of North Queensland have spent hundreds of thousands of pounds since the war on drainage and other mosquito eradication projects, so that the white

population of this part of Australia will be free of malaria. The danger point is the sea port and air port city of Cairns, with a population of 18,000 people, surrounded by low-lying swampy country, which is a prolific breeding ground for *Anophelines*. Following the malaria outbreak in Cairns in 1942, the Commonwealth Government constructed many miles of earth-formed main and lateral drains to empty some of the swamps close to camps. Most of these drains run through the city area. When the war moved north of Australia in 1944, the army moved out, and maintenance of these drains was left to the civil authorities. The cleaning and spraying of earth-formed drains in a tropical climate with high rainfall and quick growth of vegetation is a costly undertaking, and the Cairns City Council has been unable to maintain them properly. In time, these drains will degenerate to creeks running through the town, and will be almost impossible to keep clear.

The only solution is to make the main drains permanent by grouting or concreting them—and this will be a major works project. Repeated representations have been made for financial assistance from the Commonwealth Government to enable this to be done, but despite its importance from the viewpoint of national health and defence, no finality has been reached.

The danger from malaria was illustrated by an outbreak in June, 1952, in the Torres Strait groups of Islands, when cases of subtertian malaria occurred on Darnley, Murray and Thursday Islands. Murray and Darnley are small islands about 120 miles north-east of Thursday Island, and lying about 70 miles away from the mainland of New Guinea. The outbreak, which is still under investigation at the time of writing, began on Murray Island late in May, and over 50 infections with *Plasmodium falciparum*, were confirmed microscopically, with 10 deaths, in a population of about 300 people.

On Darnley Island, malarial parasites were present in 45 per cent of the population of about 300. Both of these islands were malaria free until *Anopheles punctulatus farauti* was introduced. The disease appeared to spread from New Guinea to Darnley and Murray and thence to Thursday Island by infected lugger crews, but the *anopheles* mosquito was available to transmit the disease in each place. Mosquito control measures and anti-malarial drugs quickly ended the outbreak.

*Poliomyelitis.*—See Appendix B for report on the recent severe outbreak.

*Q fever, Erythema Nodosa and Pleural Effusion.*—On 10th January, 1952, Q fever, Erythema Nodosa and Pleural Effusion were declared to be notifiable diseases under the Health Acts. Q fever was discovered by Derriek, whilst he was Director of the Laboratory of Micro-Biology and Pathology, and has since been found to have a world wide distribution. Original work of outstanding value was performed by Derriek and his small band of co-workers in the pre-war years, but the true incidence of Q fever in Queensland is not known. The introduction of the more sensitive complement fixation test for Q fever in place of the agglutination test, has enabled more cases of this disease to be diagnosed, and it is felt



that notification of every proved case can lead to valuable information on the incidence and occupational risk of this disease. Incidentally, Q fever does not mean Queensland fever. Derrick did not know what to call this new disease in 1937, and decided on "Q" for query or question, little thinking that the "Q" would some day be associated with Queensland.

The decision to make Erythema Nodosum and Pleural Effusion notifiable was based on the fact that some patients with these diseases have tuberculosis. All notifications are passed to the Director of Tuberculosis, who institutes inquiries to determine which ones are tuberculosis. Patients whose disease is tuberculous in nature, and who are infectious, are then eligible for tuberculosis pension whilst under treatment and unable to work.

**Tuberculosis.**—Notifications of tuberculosis totalled 779, of which 453 were notified from the Greater Brisbane Area, as compared with 595 (331) in 1950-51, and 513 (326) in 1949-50. This rather substantial increase is due, not so much to case finding activities of the Division of Tuberculosis, as to better notification by doctors and to the anxiety of patients to obtain the benefit of tuberculosis pensions. The aim of tuberculosis control is to detect all cases of tuberculosis and to follow these up and treat all open cases until they are no longer infectious to others. Then tuberculosis morbidity in the population will commence to decline because fewer people will be infected each year. It therefore follows that notifications of tuberculosis can be expected to increase in the next few years as case finding programmes are instituted, but this should not be interpreted as meaning that the incidence of tuberculosis has increased. It simply means that more cases are being diagnosed and fewer infectious cases will remain uncontrolled to spread infection to others.

**Tetanus.**—In most Australian States, tetanus is not notifiable, hence it is impossible to compare the incidence in Queensland with that of other parts of the Commonwealth. Some indication of its prevalence can be obtained by comparing deaths from tetanus in Queensland and in the Commonwealth. For the five-year period, 1945-49, deaths from tetanus totalled 341 in Australia and 89 in Queensland. On a population basis, Queensland would be expected to have about 50 deaths over this period, so that the mortality rate from tetanus in this State is well above the Australian average. The reasons for this are not at all clear, and would well repay further study.

Notifications of tetanus totalled 34 in 1951-52, as compared with 32 in 1950-51. Precise information concerning 2 cases is lacking, but analysis of the remaining sixty-four notified cases into age and sex distribution is shown in Table X., from which the following conclusions can be drawn.

- (1) *Sex Incidence.*—In all age groups there is a striking preponderance of males, and of the 64 cases analysed, only 13 (or 20 per cent.) are females. It has long been known that about three times as many cases of tetanus occur in males as in females, and the usual assumption is that the occupations of men are more likely to bring them in contact with tetanus bacilli through injuries suffered

at work. However, that will hardly explain the increased incidence in male children. Probably boys do play harder than girls and fall and injure themselves more often, but that would not be the case in young children, where falls and injuries must be approximately equal. Marvell and Parish (British Medical Journal, 1940, 2, 891) found that females responded better than males to active immunization, and pointed out that twice as many boys as girls died from tetanus in England. They concluded that females must have greater inborn resistance to tetanus.

- (2) *Age Incidence.*—One patient developed neonatal tetanus and died. 11 patients (or 17 per cent.) were less than five years of age, and 32 patients (50 per cent.) were between five and fifteen years of age. It is obvious that the disease strikes most frequently at children, as no fewer than 44 patients (or 69 per cent. of this series) were less than fifteen years old.

Because of the relatively high incidence of tetanus in children, this Department has encouraged Local Authorities to offer free active immunization against tetanus. It is pleasing to record that over thirty shires, towns and cities have commenced immunization programmes for children, the tetanus toxoid being made available free of charge by the Commonwealth Government. As many children are now also being immunized against tetanus by private doctors, it is felt that within five years, sufficient children will have been immunized to lower appreciably the incidence and mortality from this preventable disease. If only a third of the 108 children who would normally develop tetanus in the next five years can be saved by active immunization, the cost to the community will be well worth while.

**Types of Injury that cause Tetanus.**—The present series of 64 cases have been analysed to ascertain the type of injury that preceded tetanus and details are given in Table XI.

Over 70 per cent. of injuries resulting in tetanus, involved the legs or feet, the commonest type of injury being lacerations and abrasions, followed by punctured wounds caused by treading on a nail, a thorn or a bone. A splinter was the sole injury in four cases of tetanus, two being in the foot, and two on the hands. Other interesting causes were a surgical operation (for which no source of tetanus could be discovered on examining material introduced into the operation site), a dental operation and a septic abortion. Clearly, lacerations and punctured wounds of the feet are the most frequent portal of entry for the tetanus bacillus.

Deaths for this series of cases are not known, but in other years, about 50 per cent. of notified cases have been fatal.

**Tetanus in Surgical Starch Powder.**—In March, 1952, a patient at a private hospital in Brisbane developed tetanus following operation for intestinal obstruction. Before her death, a sample of faeces was obtained, but no growth of *Clostridium tetani* was obtained on culture. Suture material was sterile on culture. The hospital possessed an efficient autoclave, tests



showing that a temperature of 122 deg. C. (252 deg. F.) was reached inside the chamber. Sterilization techniques were satisfactory with the possible exception of glove powder sterilization. Two glove powders were available at this hospital—a talcum powder and a prepared starch powder now widely used as a substitute for talc.

The powder was sterilized in small gauze bags, containing perhaps a teaspoonful, at the same time as the rubber gloves, and this method of packing, although commonly used, will not necessarily ensure sterility. The talcum powder gave no growth of tetanus bacilli on culture, but from an opened and partly used bottle of starch powder, tetanus bacilli were grown. It is possible that tetanus bacilli were introduced into the operation site by imperfectly sterilized glove powder, but this could not be established definitely.

Talcum powder on occasions has been found to harbour tetanus bacilli, and considerable publicity attended a finding of this nature in New Zealand several years ago. However, no reports of tetanus bacilli occurring in prepared starch powder appear to have been published. Although it is not known how frequently tetanus bacilli contaminate this special powder, all State Health Departments were advised by telegram, and a circular was forwarded to every public and private hospital in Queensland, setting out satisfactory methods of sterilizing glove powders by hot air.

This State has been concerned about the efficiency of hospital autoclaves for three years, and during that time, numerous inefficient machines have been replaced by autoclaves fitted with thermometers and operating at twenty pounds of steam pressure. A booklet on sterilization procedures, now in print, will be issued to all public hospitals, so that infections following surgery will be even less frequent than they are now.

*Typhus Fever.*—For the first time, notifications of typhus fever are dissected according to type—whether scrub, tick or murine. Tick typhus and scrub typhus occur in the coastal tropics north of Mackay, and do not seem to occur in other parts of the State. Murine typhus occurs in those whose occupation brings them into contact with rats at grain stores, peanut silos and produce stores. Whenever a case of murine typhus occurs, rat baiting of the premises is undertaken, and rat runs are sprayed with DDT powder to kill fleas. Rarely has a case been reported after these measures are taken. The special investigations now being undertaken into fevers of North Queensland, have enabled more than the average number of cases of tick and scrub typhus to be diagnosed during the year, but these types of typhus are no more numerous than formerly. Dibutyl phthalate as a mite repellent, is being used fairly extensively by workers likely to contract scrub typhus, and there is no doubt of its efficiency as a prophylactic when properly used.

TABLE X.  
SHOWING AGE AND SEX DISTRIBUTION OF 64 CASES OF TETANUS NOTIFIED FOR THE TWO YEARS PERIOD 1st JULY, 1950 TO 30th JUNE, 1952.

Age Group.								Number of Cases.			
								Male.	Female.	Total.	Per cent. of Total.
0- 1 year	..	..	..	..	..	..	..	1	0	1	1.5
1- 4 years	..	..	..	..	..	..	..	7	4	11	17.2
5-14 years	..	..	..	..	..	..	..	27	5	32	50.0
15-29 years	..	..	..	..	..	..	..	5	1	6	9.4
30-44 years	..	..	..	..	..	..	..	4	2	6	9.4
45-59 years	..	..	..	..	..	..	..	4	1	5	7.8
60 years and over	..	..	..	..	..	..	..	3	0	3	4.7
								51	13	64	100.0

TABLE XI.  
SHOWING TYPES OF INJURY PRECEDING 64 NOTIFIED CASES OF TETANUS.

Injury.										Total.	Per cent. of Total.
Lower Limbs—										45	70.3
Laceration, abrasion or both .. .. . 24											
Punctured wound (nail, thorn, bone) .. .. . 18											
Splinter .. .. . 2											
Infected ingrown toenail .. .. . 1										3	4.7
Upper Limbs—											
Splinter .. .. . 2											
Abrasions .. .. . 1											
Elsewhere on Body—										8	12.5
Facial injury .. .. . 2											
Surgical operation (haemorrhoidectomy) .. .. . 1											
Dental Extraction .. .. . 1											
Incision of Abscess .. .. . 1											
Septic Abortion .. .. . 1											
Foreign Body in nose .. .. . 1											
Umbilical Cord (neonatal) .. .. . 1										8	12.5
Uncertain or Unstated .. .. . ..										8	12.5
										64	100.0



HANSEN'S DISEASE (LEPROSY).

(1) HANSEN'S DISEASE IN THE WHITE POPULATION.

PEEL ISLAND LEPROSARIUM.

Acting Superintendent: M. H. Gabriel, B.Sc.,  
M.B., B.S.(Q'ld.), A.A.C.I.

The appointment of Dr. M. H. Gabriel as Superintendent of the Peel Island Leprosarium followed reorganisation of that institution. Dr. Gabriel who before his medical course, was an analyst in the analytical laboratory, is a Government Medical Fellowship Holder.

*Statistics.*—The use of sulphone and other other newly discovered drugs continues to show beneficial results as indicated by clinical arrest of the disease and bacteriologically negative smears. A comparison of the statistics of the past three years is shown in Table XII.

TABLE XII.

SHOWING POPULATION CHANGES AT PEEL ISLAND FOR THE LAST THREE YEARS.

	1949-50.			1950-51.			1951-52.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Population at 1st July .. ..	46	13	59	44	10	54	39	6	45
Admitted .. ..	3	..	3	5	..	5	6	1	7
Discharged .. ..	2	2	4	9	4	13	5	..	5
Died .. ..	3	1	4	1	..	1	4	..	4
Population at 30th June ..	44	10	54	39	6	45	36	7	43
Increase .. ..	..	..	..	..	..	..	..	1	..
Decrease .. ..	2	3	5	5	4	9	3	..	2

The total population at 30th June, 1952, includes four patients who are eligible for release under supervision and they will be discharged when arrangements with their relatives are completed. The actual total population of patients with the active disease is therefore 39.

There were seven admissions during the year—six males and one female. The female patient had been discharged in August, 1947, after treatment with chaulmoogra oil derivatives; she has not at any time been given sulphone drugs. All six of the male patients are new admissions, and only one of them has a family history of the disease. It is still true to say that no patient discharged from Peel Island after treatment with sulphone drugs has relapsed.

The conditions of discharge remain unaltered, that is to say, patients must obtain twelve consecutive negative smears taken at monthly intervals, or they may be released after six consecutive negative smears under certain conditions. Every patient before discharge is examined by a board of three doctors, one of whom is a non-departmental practitioner, to make certain there are no signs of active disease. Patients are discharged under medical supervision and are examined periodically for the six years following release. Five male patients were discharged during the year.

There were four deaths during the year. As is usual, Hansen's disease was not the cause of death; three patients died from a heart condition while the death of the fourth patient was due to cerebral embolism. All four were males.

*Medical Treatment.*—Treatment of Hansen's disease is continuing with four sulphone drugs, and with a thiosemicarbasone drug. The sulphone drugs in use are:

(a) Promin (diaminodiphenyl sulphone-nn-didextrose sulphonate),

- (b) Diasone (disodiumformaldehyde sulphoxylate of diaminodiphenyl sulphone).
- (c) Solapsonc (sulphetrone) (tetraosdium phenylpropylaminodiphenyl sulphone).
- (d) Dapsone (D.D.S.) (diamino- diphenyl-sulphone),

and the thiosemicarbasone drug in use is—

Thiacetazone (para-acetamidobenzaldehyde thiosemicarbasone).

Although the discovery of the sulphone drugs constituted the most important advance in the therapy of Hansen's disease, and has resulted in the apparent arrest of the disease in many patients, they cannot be considered the perfect drug as *M. leprae* appears to be resistant to their action in a number of instances. They usually take a minimum of three to four years to give results which will enable the patient to be released, and this was confirmed by the number of patients released in 1950-51, some four years after the introduction of the drugs into Queensland. The number of patients eligible for discharge during the past year was nine as against thirteen during the previous year. This is parallel with experience elsewhere, but despite this most patients show continued improvement.

Thiacetazone has now been in use at Peel Island for some 16 months. This drug appears to be just as effective as the sulphone drugs, but it is not noticeably better than any of them. Recent overseas literature suggests that dosages over 150 milligrams a day are toxic, but this has not been the experience at Peel Island. Here doses of up to 400 milligrams a day have been used, and it is not until doses over 300 milligrams a day are given that toxic effects appear, and even then the toxic effects are not nearly so marked as are those of the sulphones.



The chief toxic effects are anaemia and leukopenia (but not to the same degree as with the sulphones), mild nausea, and drug induced "lepra" reactions. Thiacetazone does not produce the psychotic effects seen in some patients taking sulphones, in fact, several patients with mild to marked psychoses have been taking 250 milligrams and more of thiacetazone a day with marked improvement to both the Hansen's disease, and the psychosis.

Thiacetazone also has another very important use in that it is an alternative treatment which proves effective when patients appear to come to a standstill on one or other of the sulphone drugs. When treatment is changed to thiacetazone the patients appear to make progress once more.

From the short experience with thiacetazone at Peel Island, it could safely be said that this drug is quite as effective as the sulphones, that it is less toxic even in larger doses than those usually recommended, and that it is most useful in psychotic patients who are usually made worse by the sulphones.

A course of isonicotinic acid hydrazide is being given to a few selected patients on an experimental basis, but as these experiments have only just begun, no idea can be given of the effect of this drug on Hansen's disease.

*Specialist treatment.*—With the decline in the poliomyelitis epidemic, arrangements were made with the General Superintendent, Brisbane General Hospital, to admit patients again to Wattlebrae Hospital. A total of 27 patients was transferred during the year, five making two visits, three making three visits and one making four visits.

A complete dental unit was established in the hospital block and 11 visits were made by a dentist from the Brisbane Dental Hospital who carried out all classes of dental treatment required.

Visits were made to two optometrists (H. G. McPhail and J. F. Elliott) as required, and spectacles were given to patients when indicated. Mr. Elliott is interested in plastic work as a hobby and arrangements have been made for him to make 3 plastic noses for patients.

Mr. H. G. McPhail died during the year. He had visited Peel Island for many years and during that time, because of his kindly manner, had endeared himself to both patients and staff.

Extensive use was made again this year of the facilities provided by the Laboratory of Micro-biology and Pathology. Table XIII. shows the numbers and types of specimens submitted for examination.

TABLE XIII.

	Specimens.
Venous Blood for Full Blood Examination	676
Tissue Smears (for M. Leprae) .. ..	489
Venous Blood for Serological Tests ..	4
Venous Blood for Fasting Blood Sugar Estimates .. .. .	8
Urine Specimens for Chemical and Microscopical Examination .. .. .	472
Total .. .. .	1,649

*Health Education.*—Early diagnosis is the most important step in the treatment of Hansen's disease and the realization of this was responsible for this subject being taught to

medical students in the Social and Tropical Medicine course. Two lectures are given by the Medical Superintendent and students are encouraged to visit the Island. Visitors who are interested in the welfare of the patients are welcomed also, as it is realised that persons who have seen for themselves that the disease is not that described in the Bible are the best educators of the general public.

*General.*—A pleasing step in the administrative control of Peel Island was the decision to call for tenders for the launch service. This service had been a matter for concern for some time and although the present contract has only been in force for one month, it has proved most satisfactory and there is no reason why it should not continue so. In addition the service should result in a financial saving to the Department.

Because of the fact that the patients at Peel Island are compulsorily segregated they are entitled to any amenities within reason that will make their lives as happy as possible. For this reason all patients are supplied with radio sets, free clothing, luxuries, such as tobacco and beer. An allowance is paid by the State where a patient has dependants. It is to be regretted that, despite the resolution of the Thirtieth Session of the National Health and Medical Research Council that "... the Commonwealth Government should pass a special Act granting to certain lepers allowances along the lines of those available to sufferers from tuberculosis, under the Tuberculosis Act", the Commonwealth Government refused to accede to the recommendation.

The only real complaint of the patients is still on the question of segregation. The large number of patients discharged during the last two years has made me more firmly convinced that segregation of infectious cases, with education of the public so that anyone suspecting he is suffering from the disease will report early, is the means of eventually eradicating Hansen's disease in Queensland.

*Burpengary.*—The prefabrication of buildings for the Burpengary site are nearly completed, and it is expected they will be shipped about the middle of October.

I would take this opportunity of officially thanking the various organisations for their co-operation in entertaining the patients. I would mention the Toowing Sub-Branch of the R.S.S.A.I.L.A., the Relatives and Friends Association, the Greenslopes Repatriation Hospital Social Club, the Royal Antediluvian Order of Buffaloes, and the various religious bodies who visit the Island. I would particularly mention Mr. E. Ward of the Red Cross Handicraft Section who visits the Island to instruct patients in leather work and other handicrafts. Mr. Ward visits the Island nearly every week in an honorary capacity and has provided the patients with a recreation which is both useful and profitable.

The past year has been one of changes and, I feel, increased happiness for the patients. I would commend the work and administration of my Medical Superintendent, Dr. Gabriel, during the difficult period through which he has just passed. It is to him personally that the many improvements are due.



(2) HANSEN'S DISEASE IN THE ABORIGINAL POPULATION.

FANTOME ISLAND LEPROSARIUM.  
Medical Officer: R. Hilyard-Smith, M.R.C.S.  
(Eng.), L.R.C.P. (Lond.).

Only aboriginal patients with Hansen's disease are admitted to the Fantome Island leprosarium. Population changes during the year are given in Table XIV.

TABLE XIV.  
POPULATION CHANGES AT FANTOME ISLAND LEPROSARIUM  
FOR THE YEAR 1951-52.

—	Males.	Females.	Totals.
In the Leprosarium at 1st July, 1951 .. ..	46	23	69
Admitted .. ..	7	2	9
Discharged .. ..	5	4	9
Died .. ..	..	..	..
In the Leprosarium at 30th June, 1952 .. ..	48	21	69

It is pleasing to report there were no deaths during the year.

Sulphone drugs were first used at Fantome Island early in 1949 and from the commencement a favourable response to sulphetrone by mouth was noticed. Sulphetrone by injection has been given to patients not responding to oral sulphetrone.

The numbers of patients discharged annually are as follows:—

—	Males.	Females.	Totals.
1947-48 .. ..	..	..	..
1948-49 .. ..	2	1	3
1949-50 .. ..	..	..	..
1950-51 .. ..	3	5	8
1951-52 .. ..	5	4	9

Hansen's disease is a condition in which spontaneous cures occur, and it must be assumed that the discharges in the year 1948-49 were the result of this, not sulphetrone. The sulphones usually take three to four years to show results in the white patients, but the organisms in aboriginal patients appear to be more sensitive to the drug and the results of treatment are obtained more quickly.

The patients released under supervision are usually returned to the settlements from which they were admitted, and receive prophylactic treatment and examinations at regular intervals.

It has also been observed that the patients do not have reactions since the treatment with sulphetrone, as they did previously.

There were four births, all of whom were transferred to Palm Island for adoption.

SECTION OF ENTHETIC DISEASES.

Medical Officer in Charge: GEOFFREY HAYES, M.B., Ch.M. (Syd.).

Medical Officer: BEATRICE WARNER, M.B., B.S. (Melb.).

During the past twelve months 627 persons were notified to the Department as suffering from venereal disease and, as usual, the names were not divulged. This is one more than the previous year. Having regard to the increase in estimated population, this represents an incidence of 0.514 per 1,000 mean population as compared with 0.534 for the previous year. Of these notifications, 101 were females and

526 males, as compared with 109 females and 517 males in the previous year. Three hundred and eighty-two (382) of the patients were notified as suffering from gonorrhoea and 187 from syphilis, as compared with 421 and 178 respectively for the previous year.

Table XV. dissects the incidence of notified venereal disease in Queensland for the past year :

TABLE XV.  
NOTIFIED VENEREAL DISEASE IN QUEENSLAND, 1951-52.

—	Metropolitan.		Outside Centres.		Whole State.		Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
Gonorrhoea—							
Unspecified .. .. .	6	3	7	1	13	4	17
Acute .. .. .	274	32	38	6	312	38	350
Sub-acute .. .. .	..	..	2	..	2	..	2
Chronic .. .. .	1	5	1	1	2	6	8
Ophthalmia .. .. .	..	..	..	..	..	..	..
Vulvo-vaginitis.. .. .	..	3	..	2	..	5	5
	281	43	48	10	329	53	382
Syphilis—							
Unspecified .. .. .	..	3	1	..	1	3	4
Primary .. .. .	57	7	20	2	77	9	86.
Secondary .. .. .	10	4	2	5	12	9	21
Tertiary .. .. .	12	5	2	..	14	5	19
Latent .. .. .	18	7	3	4	21	11	32
Neuro .. .. .	7	4	1	1	8	5	13
Pre-natal (cong.) .. .. .	7	4	..	1	7	5	12
	111	34	29	13	140	47	187
Soft Sore .. .. .	5	..	1	..	6	..	6
Venereal Warts .. .. .	51	..	..	1	51	1	52
Ulcerative Granuloma .. .. .	..	..	..	..	..	..	..
Syphilis and Gonorrhoea .. .. .	..	..	..	..	..	..	..
	56	..	1	1	57	1	58
	448	77	78	24	526	101	627
	525		102		627		
	627						

It will be seen that 525 of these notifications (83.7 per cent.) came from Brisbane, compared with 492 in the previous year. Four hundred and fifty-nine (459) were treated at the Department's clinics, compared with 438 in the year ended 30th June, 1951.

It will be noted that only 9.7 per cent. received

treatment from private practitioners of Queensland as compared with 13.5 per cent. in the previous year. I find this difficult to believe, especially with the simplification of modern therapy, and am forced to the conclusion that a number of medical practitioners are failing in their obligation to notify patients to the Depart-



ment. Should this be so it is inevitable that persons are being infected who might otherwise have remained free.

Notifications from centres outside Brisbane are given in Table XVI. to give some idea of the "spread."

TABLE XVI.				
CENTRES OF NOTIFICATION OF VENEREAL DISEASE OUTSIDE THE METROPOLIS.				
Centre	Males.	Females.	Totals.	
Aramac .. .. .	0	1	1	
Ayr .. .. .	4	0	4	
Bowen .. .. .	3	1	4	
Bundaberg .. .. .	2	0	2	
Cairns .. .. .	15	1	16	
Charters Towers .. .. .	0	1	1	
Cloncurry .. .. .	2	0	2	
Cunnamulla .. .. .	4	1	5	
Gladstone .. .. .	2	1	3	
Gordonvale .. .. .	0	1	1	
Innisfail .. .. .	1	1	2	
Ipswich .. .. .	1	2	3	
Julia Creek .. .. .	1	0	1	
Kilcoy .. .. .	2	0	2	
Mackay .. .. .	3	2	5	
Mareeba .. .. .	1	0	1	
Maryborough .. .. .	0	1	1	
Mount Isa .. .. .	1	4	5	
Murgon .. .. .	2	0	2	
Rockhampton .. .. .	7	1	8	
Southport .. .. .	2	2	4	
Toowoomba .. .. .	4	0	4	
Townsville .. .. .	19	4	23	
Wondai .. .. .	2	0	2	
	78	24	102	

Table XVII. shows the number of venereal disease notifications since 1914.

TABLE XVII.				
SHOWING NUMBER OF VENEREAL DISEASE NOTIFICATIONS SINCE 1914.				
Fiscal Year.	Notifi- cations.	Mean Population.	Incidence per 1,000 Popula- tion.	
1914-15 .. .. .	1,414	688,212	2.054	
1915-16 .. .. .	1,946	690,494	2.818	
1916-17 .. .. .	1,477	680,772	2.171	
1917-18 .. .. .	..	688,946	..	
1918-19 .. .. .	2,003	707,732	2.83	
1919-20 .. .. .	2,848	737,463	3.861	
1920-21 .. .. .	2,302	754,374	3.051	
1921-22 .. .. .	1,815	769,180	2.359	
1922-23 .. .. .	1,710	785,466	2.177	
1923-24 .. .. .	1,521	804,442	1.889	
1924-25 .. .. .	1,503	825,313	1.821	
1925-26 .. .. .	1,401	847,757	1.652	
1926-27 .. .. .	1,319	864,502	1.525	
1927-28 .. .. .	1,373	877,753	1.564	
1928-29 .. .. .	1,382	891,435	1.55	
1929-30 .. .. .	1,541	903,703	1.705	
1930-31 .. .. .	1,552	917,830	1.690	
1931-32 .. .. .	1,841	930,456	1.978	
1932-33 .. .. .	1,464	940,628	1.556	
1933-34 .. .. .	1,576	950,462	1.595	
1934-35 .. .. .	1,248	961,200	1.298	
1935-36 .. .. .	1,125	972,767	1.156	
1936-37 .. .. .	1,211	984,056	1.23	
1937-38 .. .. .	1,256	996,448	1.26	
1938-39 .. .. .	1,147	1,008,207	1.127	
1939-40 .. .. .	1,091	1,021,426	1.077	
1940-41 .. .. .	1,328	1,032,122	1.286	
1941-42 .. .. .	1,207	1,036,690	1.164	
1942-43 .. .. .	3,101	1,040,433	2.98	
1943-44 .. .. .	2,718	1,054,810	2.576	
1944-45 .. .. .	2,391	1,068,630	2.24	
1945-46 .. .. .	1,309	1,084,125	1.207	
1946-47 .. .. .	1,373	1,097,303	1.251	
1947-48 .. .. .	1,000	1,112,722	1.112	
1948-49 .. .. .	846	1,134,738	.745	
1949-50 .. .. .	731	1,163,084	.628	
1950-51 .. .. .	626	1,172,542	.534	
1951-52 .. .. .	627	1,219,606	.514	

Table XVIII. shows the alleged sources of the 627 infections:—

TABLE XVIII.				
SHOWING SOURCES OF INFECTION.				
Non-professional .. .. .	..	..	..	355
Unknown .. .. .	..	..	..	207
Professional .. .. .	..	..	..	24
Parents .. .. .	..	..	..	13
Husbands .. .. .	..	..	..	9
Occupational (prostitutes) .. .. .	..	..	..	8
Wives .. .. .	..	..	..	6
Aboriginals .. .. .	..	..	..	3
Sister .. .. .	..	..	..	1
School .. .. .	..	..	..	1
				627

Table XIX. gives the sources of notification, and Tables XX. and XI. the marital status and ages of the cases notified:—

TABLE XIX.			
SHOWING SOURCES OF NOTIFICATION.			
—	Males.	Females.	Total.
Private Doctors—			
Brisbane .. .. .	18	7	25
Outside Centres .. .. .	29	7	36
State Totals .. .. .	47	14	61
Hospitals—			
Brisbane .. .. .	24	23	47
Outside Centres .. .. .	17	8	25
State Totals .. .. .	41	31	72
Clinics—			
Brisbane .. .. .	406	47	453
Outside Centres .. .. .	32	9	41
State Totals .. .. .	438	56	494
Totals all sources .. .. .	526	101	627

TABLE XX.			
MARITAL STATUS.			
—	Males.	Females.	Total.
Married .. .. .	105	38	143
Single .. .. .	402	37	439
Separated .. .. .	12	6	18
Widowed .. .. .	2	8	10
Divorced .. .. .	5	11	16
Unknown .. .. .	0	1	1
	526	101	627

TABLE XXI.			
SHOWING AGE GROUPS OF NOTIFIED CASES.			
Age Group	Males.	Females.	Total.
Unknown .. .. .	10	9	19
Under 1 year .. .. .	1	1	2
1-5 years .. .. .	2	2	4
6-10 years .. .. .	1	4	5
11-15 years .. .. .	0	1	1
16-20 years .. .. .	48	15	63
21-25 years .. .. .	131	17	148
26-30 years .. .. .	125	11	136
31-35 years .. .. .	75	11	86
36-40 years .. .. .	52	9	61
41-45 years .. .. .	34	3	37
46-50 years .. .. .	18	4	22
51-55 years .. .. .	13	5	18
56-60 years .. .. .	4	4	8
61-65 years .. .. .	6	2	8
Over 65 years .. .. .	6	3	9
	526	101	627

DEPARTMENTAL CLINICS FOR FEMALES.  
RECORD OF ACTIVITIES 1951-52.

A. WOMEN'S CLINIC.					
Total Interviews	..	..	..	..	1,210
New Cases	..	..	..	..	138
Notifications	..	..	..	..	53
Arsenical injections	..	..	..	..	13
Bismuth injections	..	..	..	..	274
Vaccine injections	..	..	..	..	14
Penicillin injections	..	..	..	..	335
Smears	..	..	..	..	870
Bloods	..	..	..	..	256
Dark grounds	..	..	..	..	10
Trichomonas	..	..	..	..	5
Patients cultured	..	..	..	..	212
Number of cultures	..	..	..	..	634
Patients treated (thrush, &c.)	..	..	..	..	6
Discharged	..	..	..	..	11
B. WILLIAM ST. ROOMS (EXAMINATION OF PROSTITUTES),					
Examinations	..	..	..	..	1,319
Bloods	..	..	..	..	252
Bismuth injections	..	..	..	..	16
Dark grounds	..	..	..	..	9
Smears	..	..	..	..	3,931
Patient's cultured	..	..	..	..	2
Number of cultures	..	..	..	..	6
C. NOTIFICATIONS FROM WOMEN'S CLINIC. (54).					
Gonorrhoea					
Acute	..	..	..	..	28
Chronic	..	..	..	..	5
Treated	..	..	..	..	1
					34
Syphilis—					
Primary	..	..	..	..	3
Secondary	..	..	..	..	2
Early Latent	..	..	..	..	2
Latent	..	..	..	..	1
Tertiary	..	..	..	..	1
Syphilis Treated	..	..	..	..	6
					15
(Of these notifications 5 were professional prostitutes.)					
Gonorrhoea—					
Acute	..	..	..	..	2
Chronic	..	..	..	..	1
Syphilis—					
Primary	..	..	..	..	1
Early Latent	..	..	..	..	1
					5
D. EXAMINATION OF FEMALE PRISONERS AT H.M. PRISON (78.)					
Prisoners notified as suffering from Venereal Disease 4.					
Acute Gonorrhoea	..	..	..	..	2
Sub-acute Gonorrhoea	..	..	..	..	1
Primary Syphilis	..	..	..	..	1

In addition, 31 girls were examined before admission to St. Mary's Home, Toowong. One of these was found to be suffering from latent syphilis.

DEPARTMENTAL CLINIC FOR MALES.					
A. Record of activities.					
New cases	..	..	..	..	945
Total visits	..	..	..	..	9,679
Notifications	..	..	..	..	406
Injections—					
Arsenic	..	..	..	..	43
Bismuth	..	..	..	..	669
Penicillin	..	..	..	..	1,174
Bloods submitted (W.R. &c.,)	..	..	..	..	1,556
Smears—					
To Departmental Laboratory	..	..	..	..	304
Examined at Clinic	..	..	..	..	3,089
Dark Ground tests at Clinic	..	..	..	..	198
Prophylactic treatments	..	..	..	..	927
B. Notifications (dissected).					
Early Syphilis—					
Primary	..	..	..	..	56
Secondary	..	..	..	..	6
Latent	..	..	..	..	6
Late Syphilis—					
Secondary	..	..	..	..	1
Tertiary	..	..	..	..	5
Pre-natal	..	..	..	..	2
Latent	..	..	..	..	5
Gonorrhoea—					
Acute	..	..	..	..	267
Sub-acute	..	..	..	..	1
Chronic	..	..	..	..	1
Venereal (genital) warts	..	..	..	..	51
Soft sore	..	..	..	..	5
					406
Total	..	..	..	..	406

The Male Clinic (situated at South Brisbane) in addition to the treatment of venereal disease provides both prophylactic facilities to merchant seamen and to service personnel, and clinical instruction to medical students.

The staff of the Female Clinic, in addition to the routine work at the William Street Clinic, treats the prisoners in the female section of H.M. Prison, and the Medical Officer attends the Ante-Natal Clinic of the Women's Hospital.



SECTION OF FOOD AND DRUGS.

The work carried out during the past year has included enforcement of Part IV. of the Health Acts (Pure Food and Drugs), the Health (Food Supply) Regulations, Milksellers' Regulations, Health (Insecticides) Regulations, Footwear Regulations, and the Poisons Regulations.

Operations by the staff have included the following items:—

FISH SUPPLY.

Early morning and midday sales at the Brisbane Fish Market have been supervised by two

inspectors, who, in addition, have exercised control over supplies in cold stores and retail fish shops.

As a result of the efforts of these officers 79 tons 1 cwt. 19 lb. of assorted fish were condemned as unfit for consumption during the year, and were disposed of in a manner to their satisfaction.

Details of the fish condemned are given in the following Table XXII.:—

TABLE XXII.  
SHOWING QUANTITY OF FISH CONDEMNED AND DESTROYED AT THE FISH BOARD MARKET, SOUTH BRISBANE, FOR YEAR, 1951-52.

Class of Fish.										Weight.			
										T.	C.	Q.	L.
Bream	..	..	..	..	..	..	..	..	..	6	14	1	26
Bream Fillets	..	..	..	..	..	..	..	..	..	10	16	1	22
Bonito	..	..	..	..	..	..	..	..	..	0	2	2	16
Butterfish	..	..	..	..	..	..	..	..	..	0	0	1	5
Chinaman	..	..	..	..	..	..	..	..	..	0	0	1	11
Cod	..	..	..	..	..	..	..	..	..	0	5	3	6
Cod Fillets	..	..	..	..	..	..	..	..	..	0	3	3	11
Coral Bream	..	..	..	..	..	..	..	..	..	0	0	1	20
Darts	..	..	..	..	..	..	..	..	..	0	1	3	4
Drummer	..	..	..	..	..	..	..	..	..	0	0	0	5
Flathead	..	..	..	..	..	..	..	..	..	0	9	0	26
Garfish	..	..	..	..	..	..	..	..	..	0	18	2	17
Groper	..	..	..	..	..	..	..	..	..	0	1	0	21
Groper Fillets	..	..	..	..	..	..	..	..	..	0	1	0	4
Grunter	..	..	..	..	..	..	..	..	..	0	0	0	12
Jew	..	..	..	..	..	..	..	..	..	0	0	0	18
John Dory	..	..	..	..	..	..	..	..	..	0	14	2	0
Karawai	..	..	..	..	..	..	..	..	..	0	0	0	25
Ling Fillets	..	..	..	..	..	..	..	..	..	0	5	1	15
Long Toms	..	..	..	..	..	..	..	..	..	0	10	0	23
Mackerel	..	..	..	..	..	..	..	..	..	0	2	2	7
Mixed Fish	..	..	..	..	..	..	..	..	..	2	1	1	9
Morwong	..	..	..	..	..	..	..	..	..	0	0	0	16
Mullet	..	..	..	..	..	..	..	..	..	34	4	1	10
Oyster Cracker	..	..	..	..	..	..	..	..	..	0	1	1	2
Parrot	..	..	..	..	..	..	..	..	..	0	0	1	16
Perch	..	..	..	..	..	..	..	..	..	0	0	0	7
Pike	..	..	..	..	..	..	..	..	..	0	5	1	6
Pilchers	..	..	..	..	..	..	..	..	..	0	0	1	4
Ray	..	..	..	..	..	..	..	..	..	1	6	2	16
Salmon	..	..	..	..	..	..	..	..	..	0	0	0	12
Sawfish	..	..	..	..	..	..	..	..	..	0	7	3	18
Schnapper	..	..	..	..	..	..	..	..	..	0	7	2	6
Shark	..	..	..	..	..	..	..	..	..	0	1	0	9
Smoked Fish	..	..	..	..	..	..	..	..	..	0	10	3	14
Sole	..	..	..	..	..	..	..	..	..	0	0	0	4
Squid	..	..	..	..	..	..	..	..	..	0	5	0	1
Squire	..	..	..	..	..	..	..	..	..	0	0	0	1
Sweetlip	..	..	..	..	..	..	..	..	..	1	1	2	16
Tailer	..	..	..	..	..	..	..	..	..	11	11	1	24
Trevalli	..	..	..	..	..	..	..	..	..	0	2	0	9
Trout	..	..	..	..	..	..	..	..	..	0	0	0	12
Trumpeter	..	..	..	..	..	..	..	..	..	0	0	2	25
Tuna	..	..	..	..	..	..	..	..	..	0	0	0	7
Turrum	..	..	..	..	..	..	..	..	..	0	0	0	3
Tusk Fillets	..	..	..	..	..	..	..	..	..	0	0	1	14
Whiting	..	..	..	..	..	..	..	..	..	1	5	2	11
Whiting Fillets	..	..	..	..	..	..	..	..	..	3	2	0	0
Yellowtail	..	..	..	..	..	..	..	..	..	0	14	2	13
Total	..	..	..	..	..	..	..	..	..	79	0	1	19

also :—

Cooked Prawns	..	..	..	1 ton 9 cwt. 2 qrs. 23 lbs.
Cooked Sandcrabs	..	..	..	1,295
Lobsters	..	..	..	1 ton 10 cwt. 1 qr. 1 lb.
Oysters	..	..	..	8 bags and 62 bottles



## GENERAL INSPECTIONS.

Food and drug inspection has been conducted throughout the State by officers stationed at Brisbane, Toowoomba, Rockhampton, Mackay, Townsville, Cairns, and Thursday Island.

Every phase of the duties of the section has received some attention during the year, the inspections being carried out at every type of business and premises where food and drugs are sold or where such articles are prepared, packed, or stored. In addition, the branding of footwear, the use of lead paint on dwellings and toys, and the sale and use of poisons and dangerous drugs have been supervised.

## CAFES AND EATING HOUSES.

The hygiene of cafes and other eating houses came under notice, and, as a result of departmental activities, considerable improvement was effected. In seven instances cafes were temporarily closed down and not re-opened until the improvements ordered had been carried out, whilst two premises, which were classed as unsuitable for the conduct of such trade, have now ceased business. In addition, prosecutions are pending against one cafe proprietor for continued breaches of the relevant regulations, and action has been taken with a view to initiating legal proceedings regarding breaches at another cafe premises.

## MILK SUPPLY.

The supervision of milk supplies, insofar as the application of the provisions of the Health Acts and Regulations thereunder extend, has been given the usual vigilant attention throughout the year, and a reasonably good compliance with the Department's requirements maintained in all phases of the work.

A total of 2,100 legal samples was obtained for chemical analysis. These were secured in Brisbane, Atherton, Ayr, Barcaldine, Biloela, Blackbutt, Boonah, Bowen, Bundaberg, Burleigh Heads, Butcher's Creek, Caboolture, Cairns, Caloundra, Charleville, Charters Towers, Clermont, Cleveland, Cunnamulla, Currumbin, Dalby, East Barron, Emerald, Gayndah, Goondiwindi, Gordonvale, Home Hill, Ingham, Ipswich, Kingaroy, Julia Creek, Malanda, Maroochydore, Maryborough, Murgon, Nambour, Nanango, North Johnstone, Oakey, Pialba, Proserpine, Proston, Quilpie, Rockhampton, Roma, Rosewood, Sarina, Southport, Stanthorpe, Redcliffe, Toowoomba, Tugun, Upper Barron, Wallangarra, Warwick, Winton, Woodford, Woody Point and Yeppoon.

*Prosecutions.*—The percentage number of watered samples of milk was high, and this increased incidence of adulteration was largely due to the watering of supplies by dairy farmers during the drought period. Sixty-two milk-sellers were successfully proceeded against for these offences, and magistrates inflicted penalties totalling £929 19s. 6d. Seven prosecutions were launched for the offence of selling milk deficient in fat, when the defendants were mulcted in fines and costs of £56 8s. Legal proceedings were also taken against numerous milk-sellers for such offences as the carrying of water on vehicles, selling milk without a license and the use of unsuitable vehicles. Particulars of these prosecutions are shown in Tables XXIII., XXIV. and XXV.

*Pasteurised Milk.*—The quantity of bottled pasteurised milk sold continues to increase, and the State now has 18 pasteurised milk factories extending from Warwick to Cairns, which are supervised by officers of this Department.

The 11 factories which operate within the area of the headquarters' staff are situated at Brisbane, Merrimac, Southport, Booval, Maryborough, Bundaberg, Nambour, and Murgon. These were regularly inspected, and where necessary, action was taken to recommend any necessary improvements to the premises or plant. It is pleasing to report that the managers of the factories usually co-operate with the inspector and take steps to effect these recommendations. Where this co-operation has not been forthcoming the department has not been loath to exercise its full prerogative.

During the year one factory was unable to comply with our recommendations, and, as a result, ceased operations as a producer of pasteurised milk.

Recommendations are aimed at maintaining:—

- (a) the standard of the premises and the plant.
- (b) the replacement of obsolete equipment with modern equipment.
- (c) the hygienic conduct of the factory, and
- (d) the quality of the pasteurised milk.

*Raw milk (bottled).*—A factory has been established in North Queensland for the bottling of raw milk, and this new venture is also being closely supervised. Action is being taken to require that the premises and plant strictly comply with the Health Acts.



TABLE XXIII.  
PROSECUTIONS FOR MILK ADULTERATION FOR YEAR 1951-52.

Date.					Place.					Fines.			Costs.		
1951—										£	s.	d.	£	s.	d.
23rd July	..	..	..	..	Brisbane	..	..	..	..	5	0	0	2	2	9
23rd July	..	..	..	..	Brisbane	..	..	..	..	8	0	0	2	2	9
23rd July	..	..	..	..	Brisbane	..	..	..	..	10	0	0	2	2	9
23rd July	..	..	..	..	Brisbane	..	..	..	..	13	0	0	2	2	9
22nd August	..	..	..	..	Nambour	..	..	..	..	5	0	0	1	7	0
28th August	..	..	..	..	Barcaldine	..	..	..	..	7	0	0	1	7	0
9th September	..	..	..	..	Malanda	..	..	..	..	20	0	0	1	7	0
9th September	..	..	..	..	Malanda	..	..	..	..	16	0	0	1	7	0
9th September	..	..	..	..	Malanda	..	..	..	..	7	0	0	1	7	0
11th September	..	..	..	..	Cairns	..	..	..	..	10	0	0	3	9	0
17th September	..	..	..	..	Brisbane	..	..	..	..	20	0	0	2	18	6
17th September	..	..	..	..	Brisbane	..	..	..	..	20	0	0	2	18	6
17th September	..	..	..	..	Brisbane	..	..	..	..	17	0	0	1	7	0
4th October	..	..	..	..	Malanda	..	..	..	..	20	0	0	1	7	0
4th October	..	..	..	..	Malanda	..	..	..	..	5	0	0	1	7	0
31st October	..	..	..	..	Biloela	..	..	..	..	4	0	0	1	7	0
7th November	..	..	..	..	Maryborough	..	..	..	..	16	0	0	4	10	0
11th November	..	..	..	..	Atherton	..	..	..	..	7	0	0	1	7	0
13th November	..	..	..	..	Cairns	..	..	..	..	4	0	0	1	7	0
14th November	..	..	..	..	Brisbane	..	..	..	..	18	0	0	1	7	0
20th November	..	..	..	..	Hughenden	..	..	..	..	13	0	0	7	13	0
20th November	..	..	..	..	Hughenden	..	..	..	..	13	0	0	7	13	0
20th November	..	..	..	..	Hughenden	..	..	..	..	13	0	0	7	13	0
20th November	..	..	..	..	Hughenden	..	..	..	..	20	0	0	1	7	0
20th November	..	..	..	..	Yeppoon	..	..	..	..	15	0	0	1	7	0
21st November	..	..	..	..	Winton	..	..	..	..	20	0	0	1	7	0
21st November	..	..	..	..	Winton	..	..	..	..	14	0	0	1	7	0
21st November	..	..	..	..	Winton	..	..	..	..	14	0	0	7	13	0
21st November	..	..	..	..	Winton	..	..	..	..	20	0	0	7	16	0
27th November	..	..	..	..	Proston	..	..	..	..	6	0	0	1	7	0
29th November	..	..	..	..	Kingaroy	..	..	..	..	20	0	0	1	7	0
29th November	..	..	..	..	Kingaroy	..	..	..	..	5	0	0	1	7	0
10th December	..	..	..	..	Ipswich	..	..	..	..	6	6	0	1	7	0
28th December	..	..	..	..	Cairns	..	..	..	..	5	0	0	1	7	0
1952—															
29th January	..	..	..	..	Cunnamulla	..	..	..	..	11	0	0	1	7	0
8th February	..	..	..	..	Sarina	..	..	..	..	6	0	0	1	7	0
14th February	..	..	..	..	Gayndah	..	..	..	..	25	0	0	4	12	6
14th February	..	..	..	..	Gayndah	..	..	..	..	23	0	0	2	8	0
14th February	..	..	..	..	Gayndah	..	..	..	..	23	0	0	2	8	0
14th February	..	..	..	..	Gayndah	..	..	..	..	23	0	0	2	8	0
26th February	..	..	..	..	Bundaberg	..	..	..	..	16	0	0	1	13	0
17th March	..	..	..	..	Toowoomba	..	..	..	..	13	0	0	7	13	0
28th March	..	..	..	..	Ayr	..	..	..	..	6	0	0	1	7	0
28th March	..	..	..	..	Ayr	..	..	..	..	8	0	0	1	7	0
28th March	..	..	..	..	Ayr	..	..	..	..	7	0	0	1	10	0
31st March	..	..	..	..	Toowoomba	..	..	..	..	6	0	0	1	7	0
31st March	..	..	..	..	Toowoomba	..	..	..	..	4	0	0	11	17	0
1st April	..	..	..	..	Brisbane	..	..	..	..	8	0	0	1	7	0
16th April	..	..	..	..	Toowoomba	..	..	..	..	16	0	0	3	9	0
16th April	..	..	..	..	Toowoomba	..	..	..	..	12	0	0	1	7	0
16th April	..	..	..	..	Toowoomba	..	..	..	..	10	0	0	1	7	0
16th April	..	..	..	..	Toowoomba	..	..	..	..	10	0	0	1	7	0
16th April	..	..	..	..	Toowoomba	..	..	..	..	8	0	0	1	7	0
16th April	..	..	..	..	Toowoomba	..	..	..	..	11	0	0	1	7	0
16th April	..	..	..	..	Toowoomba	..	..	..	..	7	0	0	1	7	0
16th April	..	..	..	..	Toowoomba	..	..	..	..	14	0	0	1	7	0
19th May	..	..	..	..	Toowoomba	..	..	..	..	8	0	0	1	7	0
20th May	..	..	..	..	Hughenden	..	..	..	..	20	0	0	1	7	0
20th May	..	..	..	..	Hughenden	..	..	..	..	20	0	0	1	7	0
5th June	..	..	..	..	Townsville	..	..	..	..	6	0	0	1	7	0
23rd June	..	..	..	..	Southport	..	..	..	..	20	0	0	1	7	0
26th June	..	..	..	..	Charters Towers	..	..	..	..	20	0	0	1	7	0
Totals										777	6	0	152	13	6

TABLE XXIV.  
MILK PROSECUTIONS FOR DEFICIENCY IN FAT FOR 1951-52.

Date.					Place.					Fines.			Costs.		
										£	s.	d.	£	s.	d.
1951—															
2nd July	..	..	..	..	Julia Creek	..	..	..	..	15	0	0	1	7	0
17th September	..	..	..	..	Ipswich	..	..	..	..	5	0	0	0	6	0
13th November	..	..	..	..	Proserpine	..	..	..	..	10	0	0	1	7	0
15th November	..	..	..	..	Bowen	..	..	..	..	10	0	0	1	7	0
12th December	..	..	..	..	Caboolture	..	..	..	..	5	0	0	1	7	0
1952—															
5th June	..	..	..	..	Townsville	..	..	..	..	1	0	0	1	7	0
30th June	..	..	..	..	Cloncurry	..	..	..	..	2	0	0	1	7	0
Totals										48	0	0	8	8	0



TABLE XXV.

MISCELLANEOUS PROSECUTIONS OF MILKSELLERS FOR YEAR 1951-52.

Date.	Place.	Basis of Prosecution.	Fines.	Costs.
			£ s. d.	£ s. d.
1951—				
13th July . . . . .	Rockhampton ..	Unsuitable vehicle .. ..	1 10 0	0 4 6
13th July .. . . .	Rockhampton ..	Unsuitable vehicle .. ..	1 10 0	0 4 6
13th July .. . . .	Rockhampton ..	Unsuitable vehicle .. ..	7 0 0	0 6 0
6th August .. . . .	Rockhampton ..	Unsuitable vehicle .. ..	5 0 0	0 6 0
17th September .. .	Ipswich .. . . .	Water carried on milk vehicle .. .	20 0 0	0 6 0
9th October .. . . .	Rockhampton ..	Unsuitable vehicle .. ..	5 0 0	0 6 0
7th November .. . .	Maryborough ..	Sale of milk without a license .. .	2 0 0	0 6 0
6th December .. . .	Brisbane .. . . .	Name and address not on vehicle .. .	1 14 0	0 6 0
6th December .. . .	Brisbane .. . . .	Sale of milk without a license .. .	4 14 0	0 6 0
6th December .. . .	Brisbane .. . . .	Unsuitable vehicle .. ..	4 14 0	0 6 0
20th December .. .	Brisbane .. . . .	Sale of milk without a license .. .	2 0 0	0 6 0
1952—				
9th January .. . . .	Clermont .. . . .	Unsuitable vehicle .. ..	2 0 0	0 6 0
24th January .. . . .	Bundaberg .. . . .	Water carried on milk vehicle .. .	5 0 0	0 6 0
6th February .. . . .	Brisbane .. . . .	Unsuitable vehicle .. ..	5 0 0	0 6 0
26th February .. . .	Bundaberg .. . . .	Water carried on milk vehicle .. .	15 0 0	0 12 0
4th April .. . . .	Rockhampton ..	Sale of milk without a license .. .	2 0 0	0 6 0
26th June .. . . .	Charters Towers ..	Sale of milk without a license .. .	1 0 0	0 6 0
Totals .. . . .			85 2 0	5 5 0

SPIRITUOUS LIQUORS.

Hotel inspections included the testing of the alcoholic strength of spirits offered for sale. In twelve instances legal proceedings were launched against the licensee for having spirits adulterated with added water, whilst one publican was fined for selling brandy which was not “true to label.”

The cleansing of drinking glasses in hotel bars by means of automatic hot water machines is being insisted upon in all the larger centres where power and water supplies are available. The denaturing of all waste beer with a suitable colour or oil was policed throughout the State, and it was found that in the main the hotel-keeper was co-operative in this form of protection to the pubic.

TABLE XXVI.

LIQUOR PROSECUTIONS FOR YEAR, 1951-52.

Date.	Place.	Basis of Prosecution.	Fines.	Costs.
			£ s. d.	£ s. d.
1951—				
4th July .. ..	Richmond ..	Brandy, adulterated .. ..	15 0 0	1 7 0
4th July .. ..	Richmond ..	Gin, adulterated .. ..	15 0 0	1 7 0
5th July .. ..	Tambo .. ..	Whisky, adulterated .. ..	5 0 0	1 7 0
10th September ..	St. George ..	Whisky, adulterated .. ..	15 0 0	1 7 0
10th September ..	St. George ..	Rum, adulterated .. ..	15 0 0	1 7 0
4th December ..	Day Dream Island	Gin, adulterated .. ..	15 0 0	1 7 0
4th December ..	Day Dream Island	Gin, adulterated .. ..	15 0 0	1 7 0
7th December ..	Roadvale ..	Whisky, adulterated .. ..	3 0 0	1 7 0
7th December ..	Roadvale ..	Gin, adulterated .. ..	5 0 0	1 7 0
1952—				
7th January ..	Walkerston ..	Brandy, misdescribed .. ..	2 0 0	1 7 0
24th January ..	Bundaberg ..	Rum, adulterated .. ..	10 0 0	1 7 0
4th April .. ..	Rockhampton ..	Brandy, adulterated .. ..	15 0 0	1 7 0
28th April .. ..	Kabra .. ..	Rum, adulterated .. ..	10 0 0	1 7 0
Totals .. ..	.. ..	.. ..	140 0 0	17 11 0

PRESERVATIVES IN MEAT.

It was found that some butchers continue to use a preservative substance in fresh meat in contravention of the Food and Drug Regulations, 1939. The danger of this practice will be appreciated when it is remembered that stale meat so treated becomes bright red in colour with every evidence of freshness. This meat

usually minced is often used as food for invalids.

Five Brisbane butchers were fined for the use of sulphur dioxide in minced meat, whilst one butcher was successfully prosecuted for having used in sausage meat a quantity of sulphur dioxide in excess of the quantity (3½ grains per lb.) permitted by law. Particulars are shown in Table XXVII.

TABLE XXVII.

PROSECUTIONS FOR ADULTERATED MINCED MEAT AND SAUSAGES FOR YEAR, 1951-52.

Date.	Place.	Name of Article and Quantity of Preservative (Sulphur Dioxide) Present.	Fines.	Costs.
1952—			£ s. d.	£ s. d.
5th March ..	Brisbane .. ..	Minced meat adulterated with 4·0 grains per pound of SO <sub>2</sub> .. .. .	10 0 0	1 7 0
5th March ..	Brisbane .. ..	Minced meat adulterated with 11·5 grains per pound of SO <sub>2</sub> .. .. .	5 0 0	1 7 0
5th March ..	Brisbane .. ..	Minced meat adulterated with 3·8 grains per pound of SO <sub>2</sub> .. .. .	5 0 0	1 7 0
9th April .. ..	Brisbane .. ..	Sausage meat adulterated with 6·5 grains per pound of SO <sub>2</sub> .. .. .	10 0 0	1 7 0
23rd April .. ..	Brisbane .. ..	Minced meat adulterated with 6·1 grains per pound of SO <sub>2</sub> .. .. .	7 10 0	1 10 0
23rd April .. ..	Brisbane .. ..	Minced meat adulterated with 3·9 grains per pound of SO <sub>2</sub> .. .. .	7 10 0	1 7 0
Totals .. .. .	.. .. .	.. .. .	45 0 0	8 5 0

UNSOUND FOOD.

As a result of inspection of premises and stocks, officers have certified to the destruction

of 33 tons 9 cwt. 0 qr. 25 lb. of deteriorated and unsound food made up as per the list in Table XXVIII.

TABLE XXVIII.

SHOWING QUANTITIES OF FOOD DESTROYED IN YEAR 1951-52.

Article.	Weight.	Article.	Weight.
	T. C. Q. L.		T. C. Q. L.
Baking Powder .. ..	0 0 3 7	Honey .. .. .	0 1 0 24
Butter (Canned) .. ..	0 1 2 10	Ice Cream Mix .. ..	0 0 0 2
Cakes .. .. .	0 0 2 21	Jams and Conserves .. ..	1 3 3 26
Cereals .. .. .	1 9 1 23	Macaroni, Spaghetti and Vermicelli	0 5 2 6
Cheese .. .. .	0 19 1 10	Malted Milk (Tablets) .. ..	0 0 0 4
Citric Acid .. .. .	0 1 3 24	Meat (Canned) .. .. .	0 7 3 8
Cocoa .. .. .	0 0 2 17	Meat (Fresh) .. .. .	0 7 0 2
Coconut .. .. .	0 2 1 8	Meat Extract .. .. .	0 1 0 16
Coffee .. .. .	0 0 0 24	Pickles .. .. .	0 0 1 19
Condiments .. .. .	0 1 0 14	Prawns .. .. .	0 0 1 22
Confectionery .. .. .	0 2 2 22	Puddings and Pies .. .. .	0 2 0 17
Cordials .. .. .	0 0 1 13	Sauces .. .. .	0 0 0 11
Cornflour .. .. .	0 0 1 12	Sausage .. .. .	0 6 2 0
Custard Powder .. .. .	0 0 0 18	Soups (Canned) .. .. .	0 1 3 11
Dripping .. .. .	0 0 1 5	Soup Powders .. .. .	0 0 1 1
Fish (Canned) .. .. .	1 10 1 13	Sugar .. .. .	0 2 3 3
Fish (Fresh) .. .. .	0 1 0 8	Tea .. .. .	0 2 0 19
Flour .. .. .	7 10 1 20	Vegetables (Canned) .. ..	0 1 1 15
Fruit (Preserved) .. ..	14 16 2 18	Vegetables (Fresh) .. ..	2 3 3 21
Fruit (Fresh) .. .. .	0 16 3 14		
Fruit Juice.. .. .	0 0 3 24		
Ham .. .. .	0 2 0 5		
		Total .. .. .	33 9 0 25

also :—

Miscellaneous Groceries .. 260 packages.  
Loose Malt .. .. . a quantity.  
Bananas .. .. . 44 bunches.

Poultry (Dressed) .. .. 3 cases.  
Tobacco .. .. . 18 cwt. 2 qr. 1 lb.  
Cigarettes .. .. . 5,491,919.  
Cigars .. .. . 113.

BREAD.

The inspection of bakehouses and the quality of bread received attention as opportunity offered. The weighing of loaves was also carried out, and as a result two bakers were fined for having in their possession bread that was deficient in its due weight. With the amendment of the Weights and Measures Act the

weight of bread is now the responsibility of that department.

Complaints of foreign bodies being discovered in bread were received and investigated, but in one instance only was the householder prepared to supply the necessary evidence to substantiate the prosecution of the baker concerned.



TABLE XXIX.  
SHOWING PROSECUTIONS OF BAKERS FOR YEAR 1951-52.

Date.	Place.	Basis of Prosecution.	Fines.	Costs.
			£ s. d.	£ s. d.
1951—				
16th July .. ..	Baralaba .. ..	Bread deficient in weight .. ..	2 0 0	0 6 0
31st October .. ..	Biloela .. ..	Bread deficient in weight .. ..	9 0 0	0 6 0
16th November .. ..	Toowoomba .. ..	Foreign body (bandage) in loaf of bread ..	50 0 0	0 6 0
1952—				
6th June .. ..	Cairns .. ..	Rat infested bakery .. ..	20 0 0	0 6 0
6th June .. ..	Cairns .. ..	Dirty bakery premises .. ..	10 0 0	0 6 0
		Totals .. ..	91 0 0	1 10 0

SAMPLING.

A total of 3,958 samples of foods, drugs, and poisons was obtained by departmental officers during the year and submitted to the Government Chemical Laboratory for examination. These samples include beverages and cordials, bread, cereals, condiments, disinfectants, drugs and medicines, essences, fish, fruit and fruit juice, jam and jelly, meat, milk, milk products, paint, spirituous liquor, tobacco, toys, vegetables and miscellaneous articles.

BACTERIOLOGICAL SAMPLING.

One thousand and fifteen specimens, including the following articles, were collected and submitted to the Director of the Laboratory of Microbiology and Pathology for examination, viz:—Bananas (canned), black pudding, bottles, bread, bread and butter custard, carrot juice, cigarettes, custard powder, cauliflower, dental cream, disinfectants and antiseptics, dough, fruit juices, gravy, gravy essence, ice cream, meat, meat (canned), milk, milk (dried), molasses, orange segments, oysters, potatoes, sausages, talc, vegetables, vegetables (canned), white pudding, white sauce, yoghurt.

DRUGS AND MEDICINES.

The labelling and advertising of drugs and patent medicines has been checked, and the publication of advertisements claiming preparations to be panaceas, or which suggested that they would cure certain diseases, has been prohibited. A proprietary medicine for which a cure for all ills was claimed was found to consist of molasses.

A consignment of Chinese preparations claiming aphrodisiac properties was withdrawn from sale as contravening the provisions of “The Food and Drug Regulations, 1939,” whilst advertising matter of a Chinese herbalist which claimed that medicines would cure diabetes and banish impurities of the blood was also prohibited.

POISONS.

Routine inspections under the Poisons Regulations have been made, and where necessary all breaches of these Regulations were promptly

rectified. Particular attention was given to the packing and labelling of poisons, and the sale of such articles by licensed poison dealers.

RESTRICTED AND DANGEROUS DRUGS.

During the past year the restricted drug and dangerous drug schedules have been extended by the addition of new drugs, and chemists, private hospitals, and medical practitioners have been subjected to close scrutiny to ensure that the control over these drugs has not been relaxed.

In the latter regard it is considered that the persons concerned are in the main honouring their obligations under the relevant regulations.

Special investigations made during the year include the supposed illicit sales of antabuse and cocaine; the obtaining of dangerous drugs by two suspect addicts, one of whom was a qualified pharmacist who was subsequently dealt with by the Pharmacy Board; the purchase of dangerous drugs in excessive quantities by four medical practitioners, two of whom have proved to be self-administering such drugs. Another investigation concerned the dispensing of the following prescription:—

Atropine Sulphate gr. 1/100  
Aqua ad 3 i

The mixture as submitted by the prescriber was found to contain 40 times more atropine than prescribed. Action was not taken against the pharmacist concerned due to the absence of the complainant in another State.

FOOTWEAR.

Two Ministerial conferences were held in Melbourne during the year at which the uniform branding of footwear was discussed.

A survey of the local shoe market revealed that generally shoes are properly branded within the provisions of “The Footwear Regulations of 1950.”

Imported lines from Great Britain, however, do not usually bear the name of the manufacturer as laid down by regulation, although in most cases a trade mark is substituted. In these instances there is little doubt as to the origin of the product.



TABLE XXX.  
PROSECUTIONS FOR MISCELLANEOUS OFFENCES DURING THE YEAR, 1951-52.

Date.	Place.	Basis of Prosecution.	Fines.			Costs.		
			£	s.	d.	£	s.	d.
1951—								
5th July ..	Brisbane ..	Sale of deteriorated onions ..	5	0	0	0	6	0
10th August ..	Brisbane ..	Dirty food premises ..	10	0	0	0	6	0
14th September ..	Brisbane ..	Food exposed to contamination ..	5	0	0	0	6	0
17th September ..	Gladstone ..	Food exposed to contamination ..	2	0	0	0	6	0
9th October ..	Rockhampton ..	Smoking in bakehouse ..	3	0	0	0	6	0
10th October ..	Mt. Morgan ..	Food exposed to contamination ..	5	0	0	0	6	0
10th October ..	Biloela ..	Shop in communication with bedroom ..	3	0	0	0	6	0
31st October ..	Biloela ..	Unclean yard ..	3	0	0	0	6	0
31st October ..	Biloela ..	Food exposed to contamination ..	3	0	0	0	6	0
31st October ..	Biloela ..	Food exposed to contamination ..	2	0	0	0	6	0
8th November ..	Brisbane ..	Food exposed to contamination ..	5	0	0	0	6	0
15th November ..	Bowen ..	Dirty cafe kitchen ..	10	0	0	0	6	0
15th November ..	Bowen ..	Cockroach infested cafe ..	10	0	0	0	6	0
19th November ..	Southport ..	Dirty bakehouse premises ..	10	0	0	0	6	0
19th November ..	Southport ..	Rat infested bakery ..	10	0	0	0	6	0
22nd November ..	Brisbane ..	Incorrectly labelled paint ..	5	0	0	0	6	0
28th November ..	Brisbane ..	Food exposed to contamination ..	9	14	0	0	6	0
28th November ..	Brisbane ..	Mice infested food shop ..	9	14	0	0	6	0
29th November ..	Brisbane ..	Hamburger rolls contaminated with fly maggots ..	9	14	0	0	6	0
5th December ..	Brisbane ..	Cloudy ammonia not conforming to standard ..	8	13	0	1	7	0
17th December ..	Brisbane ..	Giving false information in purchasing Schedule I. poison ..	3	0	0	0	6	0
1952—								
8th January ..	Rockhampton ..	Lead paint used on fence ..	5	0	0	3	9	0
14th February ..	Gayndah ..	Food exposed to contamination ..	5	0	0	0	6	0
4th March ..	Brisbane ..	Food exposed to contamination ..	5	0	0	0	6	0
28th March ..	Brisbane ..	Cake containing a cockroach ..	5	0	0	22	2	1
28th March ..	Brisbane ..	Lemonade containing a cockroach ..	2	0	0	0	9	0
Totals	.. ..	.. ..	153	15	0	33	19	1

## ENVIRONMENTAL SANITATION.

During the year officers from this department have visited most parts of the State. Their reports indicate that many Local Authorities are attempting to provide better sanitation and healthier environments in their areas. In many places, however, progress has been so rapid that Local Authorities have experienced difficulty in keeping pace with the expansions, so that there still remains much work to be done.

The Local Authorities of Queensland are charged with the responsibility of guarding the public health within their respective areas. They have the necessary statutory powers to take action to prevent the many diseases which are due to bad sanitation. It is their responsibility to control the breeding of flies, mosquitoes, rats, cockroaches; to ensure that nightsoil and refuse are properly collected and disposed of, and that any nuisances endangering the public health are abated.

Unless the Local Authority employ sufficient health staff which is efficient, loyal, vigilant and conscientious and allocates sufficient funds for the work there will be no progress in public health work.

Continued inspections and re-inspections are necessary to ensure that insect vectors of disease are not breeding, closets are flyproof, refuse is not exposed for rats, drainage is not defective, public conveniences are clean, rats are not harbouring, the nightsoil and refuse services are safely conducted, or that no nuisances exist. Such routine work is necessary and is the basis of field sanitation.

If any Local Authority is content with an inadequate or inefficient health service it cannot claim to have fully accepted its responsibility of guarding the public health in its area, and it is to be regretted that in some Local Authority areas where there is much developmental work yet to be done, it appears, that in the allocation of funds, preference is given to all classes of work, except that appertaining to health.

The employment of a full time health inspector to supervise health services, to see that the many regulations are observed, and to offer advice in the many aspects of practical field sanitation, if and when required, should be the aim of every Local Authority.

There are vacancies for health inspectors in eight (8) shires, three (3) joint areas and one (1) town. Most of these vacancies exist in the western parts of the State. The distribution of health inspectors throughout the State is as follows:—

City of Brisbane, 1 chief and 1 deputy chief inspector, 23 inspectors and 2 assistant inspectors..	..	27
Cities and towns .. .. .	..	28
Shires employing one or more inspectors ..	..	29
Joint Areas .. .. .	..	23
Total .. .. .	..	107

*Nightsoil Removal and Disposal.*—Very few towns in Queensland have a complete water carriage nightsoil disposal system, but there are several which are partially sewered, so that these towns together with those which have no such system are confronted with the problem of disposing of human wastes. The Local Authority may, and when directed by the Director General, shall undertake or contract for the collection, removal and disposal of nightsoil. Most Local Authorities have contracted for the removal of nightsoil from towns in their areas. A few undertake the service themselves and in these instances the service is usually efficiently and safely conducted.

A water-carriage system is carefully planned and maintained by engineers. Unfortunately, in a nightsoil removal service, such careful planning is not always evident and its conduct leaves much to be desired. In most contracts, penalty clauses exist under which the contractor may be fined by the Local Authority for any failure to carry out the contract properly. Too often this power is not fully exercised with resultant abuses by contractors whose only interest is to perform the service as quickly as possible with a minimum of labour.

A nightsoil removal service needs to be well supervised to prevent these abuses. Evidence of deterioration in services due to the lack of supervision has been brought to the department's notice on occasions.

There is still a tendency by some Local Authorities to abandon the nightsoil removal service in favour of cesspits or burial of pan



contents in back yards. Such an attitude is to be deplored. Cesspits provide a breeding ground for flies and cockroaches while haphazard burial of nightsoil is fraught with danger to any community.

Rising costs are having an influence in these attempts to abandon a removal service. But it is doubtful if the percentage increases of the weekly costs of these services equals the percentage increase of the basic wage over the past five (5) years. Whatever the cost the Local Authority should do its utmost to retain a night-soil removal service.

*Refuse Removal and Disposal.*—Most Local Authorities have contracted for the collection and removal of refuse and in such instances the results are often as bad as the collection of nightsoil.

However, it is in the disposal of refuse more than in its collection that the greatest danger lies. Controlled tipping is usually the method chosen for disposal. Unfortunately the “control”, in too many instances, ceases once the refuse is tipped, leaving uncovered decaying matter and containers capable of holding water, in which flies and mosquitoes can breed, and which will attract and harbour rats.

The controlled tipping of refuse can be of inestimable benefit in the reclamation of low lying land, as is evidenced by the many parks and playing fields which have been created out of refuse. But the dangers of this method should be fully realised and the refuse should be well covered daily with suitable covering material to prevent fly and mosquito breeding and rat attraction and harbourage. Where necessary larvacides or insecticides should be used to control any fly breeding which has been unavoidable.

The only Local Authorities not using controlled tipping are the cities of Ipswich and Toowoomba where the refuse is incinerated.

The use of lightly-covered metal weather-proof cylindrical containers at all premises as required by “The Plague Prevention Regulations of 1944” for the holding of refuse for collection, would reduce the fly strike in refuse as well as keep edible food scraps away from rats. If each Local Authority provided these containers as required by the abovementioned regulations and each occupier of premises carefully deposited all refuse therein, it would be a big step towards reducing the numbers of flies which seem to be always with us.

*Plague Precautions.*—Many Local Authorities are fully aware of their responsibilities under “The Plague Prevention Regulations of 1944” and do try to keep the rodent population at a minimum in their areas. Other Local Authorities on the other hand are content to make poison baits available to residents, and take few, if any, active measures to either starve or build the rodent out.

In the Brisbane City Area the wharves and river walls were constantly and regularly patrolled and baited; 298,900 baits were laid on the river walls and 703 rats were known to be destroyed; 127,300 baits were laid on the wharves, and 1,090 rats were destroyed.

The Brisbane City Council employs 41 men on rat control work, Rockhampton City Council 3 men, Mackay City Council 1 man, Townsville City Council 3 men, Townsville Harbour Board 1 man, Cairns 1 man, Ipswich 1 man, Maryborough 1 man, Bundaberg 1 man, and Gympie 2 men.

Table XXXI. shows the numbers of rats and mice caught and destroyed in the following nine cities on the coastal area:—

TABLE XXXI.

Area.	Rats.	Mice.
Brisbane .. .. .	61,583	3,626
Bundaberg .. .. .	665	..
Cairns .. .. .	2,168	312
Gympie .. .. .	47	..
Ipswich .. .. .	2,557	..
Mackay .. .. .	1,486	665
Maryborough .. .. .	559	99
Rockhampton .. .. .	4,875	..
Townsville .. .. .	1,648	123
Totals .. .. .	75,588	4,825
Total all rodents .. .. .	80,413	

Rat smears were submitted to the department’s laboratory, Brisbane, for examination from:—

Metropolitan Area—

Sandgate .. .. .	771
Wynnum .. .. .	724
Meatworks .. .. .	10
Total .. .. .	1,505

Extra Metropolitan Area—

Bundaberg .. .. .	683
Gympie .. .. .	40
Ipswich .. .. .	1,697
Mackay .. .. .	288
Maryborough .. .. .	389
Total .. .. .	3,097

Rat smears were submitted to and examined at Commonwealth Laboratories at—

Cairns .. .. .	2
Townsville Council .. .. .	1,212
Townsville Harbour Board .. .. .	154
Rockhampton .. .. .	4,319
Total .. .. .	5,687

*Toowoomba District.*—The conduct of night-soil and refuse removal services throughout the area was generally of a satisfactory standard, and no major malpractices were apparent. The chief faults in nightsoil disposal were the tendency to exceed the specified dimensions of the disposal trenches, and insufficient washing or disinfecting of pans.

Refuse tips, in some instances, are still poorly conducted, with indiscriminate tipping and lack of covering material the principal defects.



There was no new reticulation in any sewerage areas during the year. Greatly increased estimates of cost and the scarcity of loan money have again delayed the commencement of the Dalby sewerage scheme.

Dalby is seeking an improved water supply and preliminary tests of bores have been conducted. The new treatment plant at Goondiwindi is nearing completion, and is expected to be in operation within a few months.

The Dalby Town Council is proceeding with the first sections of its comprehensive storm water drainage scheme for mosquito eradication. Stanthorpe Shire Council is continuing its drainage for the same purpose. Toowoomba City Council has continued stonepitching of Gowrie Creek.

*Rockhampton District.*—Sanitation progressed in some Local Authority areas, particularly in areas where a health inspector is now employed and where there had been a vacancy for some time. As usual, retrograde sanitary conditions were noted where there is no inspectorial supervision.

Extension of the Rockhampton City Council's sewerage scheme continued.

Mosquito eradication work of a permanent nature was undertaken on portion of the Rockhampton Town Commonage and similar work on another section is contemplated. The Rockhampton City Council is stockpiling materials to carry out mosquito eradication works in the vicinity of Dean Street.

The Mount Morgan water supply scheme is progressing well and should be completed ere long. Yeppoon water supply scheme progressed a further stage towards completion.

Improved sanitation at a number of seaside resorts was noticed, thus providing safer camp areas.

*Mackay District.*—Little change has been effected in sanitary depots in the Mackay district since the last Annual report. The principal improvements are a new sanitary depot at Collinsville, and a new site has been chosen for Sarina well out of flood level.

Although the subsidy was withdrawn from repetitive work for mosquito eradication, the Mackay City Council continued its spraying against mosquitoes. A larvacide produced by a local firm and used by the Council produced some startling results. It kills the larvae and pupae of the mosquito very quickly, and its residual effect is lasting. In one pool treated three and a-half months ago, no breeding has been detected although other pools in the vicinity have had larvae in them although treated with the usual spray. The larvacide can be mixed in either fresh or salt water and costs 8½d. per gallon for the spray ready for use.

The plans for the erection of a new treatment works for the treatment of Mackay sewage at Mt. Basset are completed, but final approval of same has not yet been obtained.

The sanitation at camping areas at seaside resorts was found, with few exceptions, to be satisfactory over the Christmas holiday period.

*Townsville District.*—Nightsoil removal services were found to be reasonably well conducted but difficulties are being experienced in obtaining the services of reliable employees. It is particularly noticeable that in districts where qualified health inspectors are stationed, the general sanitary conditions of the towns are more satisfactory than in districts where no such officer is engaged.

The extension of the sewerage schemes in Townsville and Hughenden continued throughout the year.

The Townsville City Council is doing much to eradicate mosquitoes by the drainage and filling in of low lying areas.

The Cloncurry Shire Council is seeking subsidy on the cost of a mosquito eradication scheme of storm water drainage at Mt. Isa, while Hinchinbrook and Ayr Shires are carrying out drainage and filling in of low lying areas to eradicate mosquitoes.

Improvements in sanitation were noted at some of the beaches in this district but, unlike most resorts within the State, they are not well patronised by holiday campers. Sanitation at Caravan Parks at Townsville and Charters Towers was found to be satisfactory.

The Townsville Tobruk Memorial Baths were found to be maintained in very creditable condition and tests for residual chlorine have given satisfactory results.

Home Hill State School pool was equipped with new dressing sheds, showers and sanitary conveniences during the year.

*Cairns District.*—Sanitary depots generally were found to be excellently conducted, but refuse tips in several instances were not satisfactorily supervised by the Local Authority. The absence of covering material is the chief defect.

A new water reticulation scheme is under construction for the township of Malanda in the Eacham Shire and treatment methods are being revised in the Herberton and Mareeba Shires.

There are four distinct schemes for mosquito eradication works being undertaken in Cairns at present, either by means of reclamation of waste land, and mosquito breeding swamps or by drainage of other low lying areas. Similar work for mosquito eradication is also being undertaken by the Johnstone and Mulgrave Shires.

*Thursday Island.*—The poor financial position of the Thursday Island Town Council has necessarily curtailed many desired improvements to the sanitation of the Island, and no improvement can be reported, while much remains to be done.

#### MOSQUITO ERADICATION.

Many Local Authorities are availing themselves of the Government subsidy of fifty (50) per cent. on expenditure for mosquito eradication. Table XXXII. shows the amount of subsidy approved from 1943 to 1951, the subsidies approved for the past financial year, and the total subsidies approved from 1943 to June, 1952.



TABLE XXXII.  
SHOWING SUBSIDIES GRANTED TO LOCAL AUTHORITIES IN QUEENSLAND FROM 1943 TO 1951,  
DURING 1951-52, AND TOTAL FROM 1943-52.

Local Authority.	Total Subsidies, 1943-51.			Subsidies Granted, 1951-52.			Total Subsidies, 1943-52.		
	£	s.	d.	£	s.	d.	£	s.	d.
Brisbane City .. .. .	478,361	6	6	111,202	5	6	589,563	12	0
Bundaberg City .. .. .	9,562	5	0	..	..	..	9,562	5	0
Cairns City .. .. .	43,679	0	0	7,500	0	0	51,179	0	0
Charters Towers City .. .. .	1,312	0	0	..	..	..	1,312	0	0
Gympie City .. .. .	4,008	17	4	..	..	..	4,008	17	4
Ipswich City .. .. .	29,131	8	2	10,000	0	0	39,131	8	2
Mackay City .. .. .	13,431	0	0	6,500	0	0	19,931	0	0
Maryborough City .. .. .	12,131	6	6	..	..	..	12,131	6	6
Rockhampton City .. .. .	14,928	0	0	..	..	..	14,928	0	0
Toowoomba City .. .. .	9,658	0	0	..	..	..	9,658	0	0
Townsville City .. .. .	44,445	14	0	31,676	0	0	76,121	14	0
Warwick City .. .. .	2,939	0	0	..	..	..	2,939	0	0
Bowen Town .. .. .	2,910	0	0	..	..	..	2,910	0	0
Charleville Town .. .. .	2,356	0	0	..	..	..	2,356	0	0
Dalby Town .. .. .	7,819	0	0	1,500	0	0	9,319	0	0
Gladstone Town .. .. .	8,260	0	0	..	..	..	8,260	0	0
Goondiwindi Town .. .. .	13,570	0	0	..	..	..	13,570	0	0
Redcliffe Town .. .. .	27,109	2	11	5,754	0	0	32,863	2	11
Roma Town .. .. .	1,242	0	0	..	..	..	1,242	0	0
South Coast Town .. .. .	27,301	0	0	2,250	0	0	29,551	0	0
Albert Shire .. .. .	1,000	0	0	750	0	0	1,750	0	0
Aramac Shire .. .. .	27	0	0	..	..	..	27	0	0
Barcaldine Shire .. .. .	485	0	0	..	..	..	485	0	0
Beaudesert Shire .. .. .	3,300	0	0	..	..	..	3,300	0	0
Blackall Shire .. .. .	857	0	0	..	..	..	857	0	0
Boonah Shire .. .. .	2,930	15	0	1,000	0	0	3,930	15	0
Burrum Shire .. .. .	2,255	0	0	2,000	0	0	4,255	0	0
Caboolture Shire .. .. .	1,068	0	0	..	..	..	1,068	0	0
Cardwell Shire .. .. .	700	0	0	..	..	..	700	0	0
Chinchilla Shire .. .. .	3,500	0	0	..	..	..	3,500	0	0
Cloncurry Shire .. .. .	8,000	0	0	3,000	0	0	11,000	0	0
Douglas Shire .. .. .	4,800	0	0	..	..	..	4,800	0	0
Eacham Shire .. .. .	997	0	0	..	..	..	997	0	0
Emerald Shire .. .. .	300	0	0	..	..	..	300	0	0
Esk Shire .. .. .	153	0	0	..	..	..	153	0	0
Herberton Shire .. .. .	1,043	0	0	..	..	..	1,043	0	0
Hinchinbrook Shire .. .. .	6,665	0	0	..	..	..	6,665	0	0
Inglewood Shire .. .. .	2,413	10	0	..	..	..	2,413	10	0
Isis Shire .. .. .	4,277	0	0	..	..	..	4,277	0	0
Isisford Shire .. .. .	500	0	0	..	..	..	500	0	0
Johnstone Shire .. .. .	6,532	9	2	3,375	0	0	9,907	9	2
Jondaryan Shire .. .. .	11	0	0	..	..	..	11	0	0
Kingaroy Shire .. .. .	323	0	0	..	..	..	323	0	0
Livingstone Shire .. .. .	4,948	0	0	..	..	..	4,948	0	0
Longreach Shire .. .. .	1,840	0	0	..	..	..	1,840	0	0
Mareeba Shire .. .. .	2,760	0	0	..	..	..	2,760	0	0
Millmerran Shire .. .. .	85	0	0	..	..	..	85	0	0
Mirani Shire .. .. .	918	15	0	..	..	..	918	15	0
Monto Shire .. .. .	111	4	0	..	..	..	111	4	0
Moreton Shire .. .. .	2,602	0	0	..	..	..	2,602	0	0
Mulgrave Shire .. .. .	18,260	0	0	..	..	..	18,260	0	0
Mundubbera Shire .. .. .	2,357	0	0	..	..	..	2,357	0	0
Murgon Shire .. .. .	1,500	0	0	3,000	0	0	4,500	0	0
Nerang (Albert) Shire .. .. .	2,547	10	0	..	..	..	2,547	10	0
Paroo Shire .. .. .	6,000	0	0	3,000	0	0	9,000	0	0
Pine Shire .. .. .	..	..	..	7,500	0	0	7,500	0	0
Pioneer Shire .. .. .	3,329	0	0	3,750	0	0	7,079	0	0
Pioneer Shire—Mackay City .. .. .	1,000	0	0	..	..	..	1,000	0	0
Proserpine Shire .. .. .	2,425	0	0	..	..	..	2,425	0	0
Redland Shire .. .. .	1,325	0	0	..	..	..	1,325	0	0
Rosewood Shire .. .. .	3,205	0	0	..	..	..	3,205	0	0
Sarina Shire .. .. .	1,760	0	0	..	..	..	1,760	0	0
Stanthorpe Shire .. .. .	7,571	0	0	1,900	0	0	9,471	0	0
Tara Shire .. .. .	24	0	0	..	..	..	24	0	0
Tingalpa (Redland Shire) .. .. .	625	0	0	..	..	..	625	0	0
Wambo Shire .. .. .	320	10	0	..	..	..	320	10	0
Wangaratta Shire .. .. .	224	0	0	..	..	..	224	0	0
Widgee Shire .. .. .	1,361	0	0	..	..	..	1,361	0	0
Woongarra Shire .. .. .	750	0	0	..	..	..	750	0	0
Woothakata (Mareeba) Shire .. .. .	107	16	5	..	..	..	107	16	5
Totals .. .. .	874,249	10	0	205,657	5	6	1,079,906	15	6

CAMPING AREAS AND SEASIDE RESORTS.

Seaside resorts were visited by departmental officers before the main Christmas-New Year holiday period and also during that time. Their reports show that for the most part Local Authorities are maintaining a good standard of hygiene at seaside camps. Some Local Authorities provide not only the amenities required by "The Camp Regulations of 1949" but hot water and laundry facilities.

SWIMMING POOLS.

As the State school swimming pools were not in use last summer, activities were directed mainly towards public swimming pools.

Tests for free chlorine showed that except on two occasions the desired amount of free chlorine was present in the water. On these two occasions the defect was quickly remedied by the officer in charge.

The following table shows the results of the tests :—

TABLE XXXIII.  
MUNICIPAL POOLS.

Pool.				Number of Tests.	Number Passed.
Booroodabin	..	..	..	12	10
Davies Park	..	..	..	10	10
Ithaca	..	..	..	12	12
Spring Hill	..	..	..	11	11
Toowong	..	..	..	10	10
Totals	..	..	..	55	53

PRIVATE POOLS.

Pool.				Number of Tests.	Number Passed.
Church of England School	..	..	..	1	1
Greenlanes..	..	..	..	4	4
Y.M.C.A.	..	..	..	1	1
Totals	..	..	..	6	6

THE BEDDING AND UPHOLSTERY REGULATIONS.

Samples of various filling materials used in the manufacture of bedding and upholstery were obtained and submitted to the Government Analyst. The following table gives the results of the analyses.

TABLE XXXIV.

Materials.				Number of Samples.	Chlorine Standard.		Ammonia Standard.		Turbidity Standard.		Oxygen Consumed.	
					Passed.	Failed.	Passed.	Failed.	Passed.	Failed.	Passed.	Failed.
Flock	..	..	..	17	17	..	17	..	15	2	*	..
Cotton Linters	..	..	..	4	3	1	*	..	..	4	..	4
Garnetted Filling	..	..	..	1	..	1	..	1	..	1	*	..
Wiping Cloth	..	..	..	4	4	..	4	..	4	..	*	..
Indian Kapok	..	..	..	1	..	1	*	..	..	1	..	1
Indian Fibre	..	..	..	7	5	2	3	4	7	..	*	..
				34	29	5	24	5	26	8	..	5
Per cent. passed 1951-52	..			..	85.5%		82.8%		76.4%			
Per cent. passed 1950-51	..			..	84.5%		82.1%		77.1%			
Per cent. passed 1949-50	..			..	91.8%		90.0%		93.8%			
Per cent. passed 1948-49	..			..	75.0%		79.7%		79.7%			
Per cent. passed 1947-48	..			..	73.0%		73.0%		74.9%			

\* No standard.

*Inspections of Licensed Premises.*—As building restrictions have prevented any very extensive work at hotels, and annual inspections have been made over a number of years, the

inspections this year have been confined to urgent and necessary sanitary matters.  
*Barbers' Shops.*—Inspections of barbers' shops reveal that for the most part barbers are complying with the regulations.



## SECTION OF HOOKWORM CONTROL.

(Microscopist in Charge, S. Thompson.)

### GENERAL.

The staff responsible for hookworm control consists of a microscopist, sister, one field inspector at Cairns, and one sister at Innisfail.

During the year the microscopist visited Woorabinda Aboriginal Settlement. All persons found positive for hookworm were treated and re-examined. Of the 589 examined, only 104 were found to be harbouring hookworms, and the children, three years and under, were treated in the hospital. At the completion of the survey, a list of names of aboriginals who were found to be harbouring other parasitic worms was handed to the visiting doctor.

All aboriginals at Foleyvale Settlement which is attached to the Woorabinda Settlement were examined, and the eight found to be harbouring hookworms were treated and cured.

Forty-six of the white staff at Woorabinda and Foleyvale were examined, and all found to be negative.

A re-survey of Yarrabah and Mona Mona Missions was carried out and it was pleasing to see the low incidence of hookworm at the settlements and missions surveyed during the year.

Mass treatment of aboriginals has been carried out at Cairns, Mossman and Cooktown areas.

The uncured hookworm hosts at the Hopevale Lutheran Mission are being re-examined regularly and treated at the hospital there.

Surveys of school children have also been carried out in the Cairns, Mossman, Cooktown, Innisfail and Tully areas. Of the 934 school children examined 40 were positive for hookworm and 114 for other parasitic worms.

Of the 3,497 specimens examined from all areas, 658 were positive for hookworm, and 253 of the hookworm hosts were treated to a cure. It was found that 969 specimens contained ova of other parasitic worms, namely *Oxyuris vermicularis*, *Trichuris trichiura*, *Hymenolepis nana*, *Taenia saginata*, and *Trichostrongylus orientalis*. Most of the patients suffering from *Trichostrongylus orientalis* came from Mona Mona Mission, and the possibility exists that drinking water might be polluted by the faeces of goats. This will be investigated.

Arrangements were made with the medical officer of the district hospital in each centre for all hosts heavily infested with hookworm to be treated in hospital and kept under observation. Children, three years of age and under, lightly infested, were also treated in hospital.

Supplies of drugs for hookworm treatment, together with graduated pipettes and chart giving the dosage to be given have been forwarded to Aurukun, Mapoon, Weipa, Mornington Island, Mona Mona and Hopevale Lutheran Missions.

Sanitary inspections were carried out in the Cairns City area and the Mulgrave Shire. A list of defective privies was forwarded each month to Local Authority Inspectors who have issued notices to have them brought up to standard.

Table XXXV. shows the incidence of hookworm disease in each area, with headings to indicate the nature of the work done.

Medical practitioners, school teachers and the local health inspectors have given all possible assistance to the Hookworm Control in helping to eradicate hookworm disease.

TABLE XXXV.

HOOKWORM CONTROL—SUMMARY OF SURVEYS CARRIED OUT DURING THE YEAR 1951-52.

Name.	Census.	Specimens.					Treatments.			
		Received.	Ex- amined.	Re- examined.	Positive.		Notices.	Delivered.	Posted.	Cured.
					H.W.	Others.				
Cairns Area— Schools .. ..	707	702	689	13	21	77	77	9	5	6
Mossman Area— Schools .. ..	52	52	52	..	..	9	9	..	..	..
Cocktown Area— Schools .. ..	19	34	19	15	18	12	12	..	18	7
Innisfail Area— Schools .. ..	72	72	72	..	..	10	10	..	..	..
Tully Area— Schools .. ..	75	74	73	1	1	6	6	..	1	1
Schools Total ..	925	934	905	29	40	114	114	9	24	14
Other Hosts in— Cairns Area ..	..	5	..	5	1	..	..	..	1	4
Innisfail Area ..	..	5	..	5	3	..	..	..	3	2
Other Hosts Total	..	10	..	10	4	..	..	..	4	6
Miscellaneous— Cairns Area ..	165	165	165	..	3	23	23	..	3	..
Mossman Area ..	21	21	21	..	..	3	3	..	..	..
Daintree Area ..	10	10	10	..	..	..	..	..	..	..
Mona Mona Mission	4	4	4	..	..	..	..	..	..	..
Cooktown Area ..	6	6	6	..	..	1	1	..	..	..
Innisfail Area ..	98	98	98	..	1	6	6	..	1	..
Tully Area .. ..	36	36	36	..	1	7	7	..	1	..
Ingham Area ..	9	9	9	..	..	..	..	..	..	..
Woorabinda Area ..	50	46	46	..	..	1	1	..	..	..
(White staff)										
Miscellaneous Total	399	395	395	..	5	41	41	..	5	..
Aborigines— Cairns Area ..	110	218	110	108	116	42	42	115	..	18
Yarrabah Mission ..	544	548	509	39	58	399	399	58	..	27
Mona Mona Mission	223	308	223	85	66	112	112	66	..	42
Mossman Area ..	16	28	16	12	18	12	12	18	..	..
Daintree Area ..	16	21	16	5	12	13	13	..	12	2
Daintree Mission ..	38	40	38	2	10	38	38	..	3	..
Cooktown Area ..	16	34	16	18	24	18	18	16	8	2
Cooktown Camp ..	..	..	..	..	..	..	..	45	..	..
Hopevale Lutheran Mission .. ..	3	232	3	229	167	5	5	106	61	63
Woorabinda Settle- ment .. ..	636	589	589	..	104	169	169	100	..	..
Woorabinda Settle- ment .. ..	..	97	..	97	26	..	..	26	..	71
Foleyvale Settlement	35	43	35	8	8	6	6	8	..	8
Aborigines Total ..	1,637	2,158	1,555	603	609	814	814	558	84	233
All areas— Cairns Area ..	982	1,090	964	126	141	142	142	124	9	28
Yarrabah Mission ..	544	548	509	39	58	399	399	58	..	27
Mona Mona Mission	227	312	227	85	66	112	112	66	..	42
Mossman Area ..	89	101	89	12	18	24	24	18	..	..
Daintree Area ..	64	71	64	7	22	51	51	..	15	2
Cooktown Area ..	41	74	41	33	42	31	31	61	26	9
Hopevale Lutheran Mission .. ..	3	232	3	229	167	5	5	106	61	63
Innisfail Area ..	170	175	170	5	4	16	16	..	4	2
Tully Area .. ..	111	110	109	1	2	13	13	..	2	1
Ingham Area ..	9	9	9	..	..	..	..	..	..	..
Woorabinda Settle- ment .. ..	686	732	635	97	130	170	170	126	..	71
Foleyvale Settlement	35	43	35	8	8	6	6	8	..	8
Grand Total ..	2,961	3,497	2,855	642	658	969	969	567	117	253

Number of treatments administered in hospital—Cairns 108, Mossman 13, Cooktown 30, Woorabinda 12.



TABLE XXXVI.  
SANITATION—CAIRNS CITY COUNCIL.

—	Cairns Area.
Number of places visited .. .. .	389
Number of Sanitary conveniences inspected	405
Number of defective privies .. .. .	188
Number of places without sanitary convenience .. .. .	1
Septic tanks .. .. .	176

CAIRNS CITY COUNCIL.

—	D. Class.	G. Class.	E. Class.	F. Class.	H. Class.
Pails ..	41	132	56	1	..
Pits ..	..	..	..	..	..
Septic ..	176	..	..	..	..

MULGRAVE SHIRE COUNCIL.

—	Cairns Area.
Number of places visited .. .. .	152
Number of sanitary conveniences inspected	196
Number of defective privies .. .. .	84
Number of places without sanitary convenience .. .. .	2
Septic tanks .. .. .	92

MULGRAVE SHIRE COUNCIL.

—	D. Class.	G. Class.	E. Class.	F. Class.	H. Class.
Pails ..	20	62	20	2	..
Pits ..	..	..	..	..	..
Septic ..	90	..	2	..	..

MULGRAVE SHIRE COUNCIL—RE-INSPECTIONS.

—	Cairns Area.
Number of places visited .. .. .	45
Number of sanitary conveniences re-inspected .. .. .	45
Number of defective privies .. .. .	19
Action taken .. .. .	45
Septic tanks .. .. .	4

MULGRAVE SHIRE COUNCIL—RE-INSPECTIONS.

—	D. Class.	G. Class.	E. Class.	F. Class.	H. Class.
Pails ..	12	15	..	..	..
Pits ..	6	4	..	..	..
Septic ..	4	..	..	..	..

D. Class—Regulation cabinet.  
G. Class —Below standard, but not allowing soil pollution.  
E. Class—Allowing soil pollution.  
F. Class—No sanitary convenience.  
H. Class—Soil pollution in evidence at time of inspection.

DIVISION OF TUBERCULOSIS.

Director: E. W. ABRAHAMS, M.D. (Melb.), M.R.C.P. (Lond.)

Medical Officer: E. M. RATHOUSE, M.B., Ch.B. (Cape Town).

Considerable progress has been made during this year in the establishment in Queensland of a Tuberculosis service, although the rate of progress has been slower than hoped.

Constructional work to modify the premises in George Street for use as a Chest Clinic is now almost completed. Equipment is coming forward rapidly and it is hoped to commence full-scale operations in August, 1952. In spite of the difficulties of working during alterations the Clinic has been able to fulfil most of its functions, with the exception of mass X-ray, during the past year. Contacts of known cases have been visited as notified, have been given public health advice and arrangements made for Mantoux testing, X-ray and B.C.G. vaccination.

Special groups which have been similarly investigated include teacher trainees, first year medical students and, with the co-operation of the Service Medical Officers, National Service Trainees in Army and Air Force camps.

Hospital staffs in the main hospitals of the State are also routine skin-tested, X-rayed and offered B.C.G. vaccination.

Radiological surveys of institution populations using large X-ray film and portable X-ray apparatus have been made with the object of protecting residents and staff.

An X-ray machine suitable for taking micro-X-rays has been installed at the Brisbane General Hospital with the intention of routine X-raying all new In-patients and Out-patients at both the General and Women's Hospitals. This serves two purposes—firstly, it is a useful means of case finding; secondly, it is a protection for the staffs of the hospitals by preventing the admission to wards of undetected active cases of pulmonary disease. In the few months it has been in operation, 11,876 persons were X-rayed with the following results:—

					Active cases.	Inactive cases.
January/February	..	..	..	..	16	16
March	..	..	..	..	18	7
April	..	..	..	..	12	4
May	..	..	..	..	15	4
June	..	..	..	..	22	7
Totals	..	..	..	..	83	38
					—	—

Many of these cases are still under investigation and will undoubtedly prove to be active cases of tuberculosis. Many more without positive sputum have X-ray pictures suggestive of

active disease and will require Chest Clinic supervision for long periods as they are undoubtedly tuberculous and may relapse.

At the Hospital for Sick Children, routine Mantoux testing of all admissions continues and the families of positive re-actors are investigated in an attempt to find the infective cases.

As a result of this work a number of cases with primary tuberculosis of the lungs have been discovered and are being kept under close observation.

TREATMENT.

The treatment and diagnosis of cases of tuberculosis in the Brisbane area is still being carried out with difficulty owing to the great shortage of beds and it is only due to the wide use of chemotherapy that it is possible to attempt to cope with the number of cases presenting. There are 150 beds available at South Brisbane Auxiliary Hospital and up to 70 patients are housed on the balconies of the Brisbane General Hospital undergoing investigation and treatment.

Arrangements have been made with the Repatriation Commission for the operative treatment of a small number of female civilian patients at the Greenslopes Hospital which will be of considerable assistance in keeping pace with the surgical demand.

Westwood Sanatorium, which caters for the Central and North Queensland areas, is still handicapped by seasonal staff shortage in the summer time and also by very limited staff accommodation. It is hoped that this latter difficulty will in part be overcome by the completion of staff quarters for which plans have been drawn up and approval for the necessary expenditure obtained.

Treatment of natives at Waiben Hospital, Thursday Island, continues and accommodation for patients discharged from hospital and awaiting transport to their homes is now complete.

Unfortunately, no Tuberculosis Officer has yet been found for this area to undertake treatment of these patients and the associated preventive work in the Islands and Gulf areas.

CASE REGISTER.

Since commencement of the Register in January, 1950, 1,234 cases in Brisbane, and 1,023 country cases have been registered. During the current year 407 country cases and 478 Brisbane cases have been added to the register, 780 being new notifications.



An analysis has been made of the record cards for contacts which have been kept over the past two years and the results are:—

*Metropolitan—*  
Total 4,324. Mantoux Positive, 2,513. Negative, 1,811. 58.1 per cent. tuberculin positive. Number showing X-ray evidence of pulmonary disease, 56 = 2.2 per cent. of those positive. Number vaccinated with B.C.G., 1,498. Number refusing B.C.G. vaccination, 315 = 17.4 per cent. of those negative.

A new form of notification, for which a fee of 10s. 6d. is payable, is at present being printed and this, it is hoped, will make for better notification from the medical profession throughout the State.

During the past three years notifications have risen considerably, the figures being—

—	1949-50.	1950-51.	1951-52.
Metropolitan .. ..	326	331	453
Extra-metropolitan.. ..	187	264	327
	513	595	780

CALENDAR YEARS.				
—	1949.	1950.	1951.	
Total .. .. .	434	594	699	

It is noteworthy that this increase has occurred before any vigorous case-finding campaign has commenced and would appear to be due to better notification by the medical profession, to contact investigation and the effects of the Tuberculosis Allowance Scheme.

The distribution in Queensland of known cases over the period 1950-52 is shown in the attached map.

OTHER ADMINISTRATIVE ACTION MADE DURING THE PAST YEAR.

(a) The proclamation in July, 1951, of Tuberculosis Regulations under “*The Health Acts, 1937 to 1949,*” giving to the Director-General the power to enforce measures for the compulsory investigation of contacts and segregation of known recalcitrant cases of tuberculosis.

(b) Proclamation in January, 1952, of pleural effusion and erythema nodosum as notifiable diseases. Both these conditions are frequently tuberculous but are not usually considered notifiable under the general heading of tuberculosis.

(c) Proclamation in June, 1952, of certain classes of new arrivals in this country as a group for compulsory X-ray examination. This action, which is taken uniformly with the other States, is to ensure that cases of tuberculosis, which may have escaped discovery in overseas checks made by the Department of Immigration on intending migrants, are discovered, and treated promptly, on arrival in Australia.

TUBERCULOSIS ALLOWANCE.

The Commonwealth Tuberculosis Allowance Scheme for which the State director is the medical referee for Queensland, continues to be of great help to sufferers from tuberculosis, as it provides them with the means necessary to stop work and carry out the treatment recommended.

There were in Queensland on 30th June, 1952, 650 cases receiving tuberculosis allowance, and

since the inception of the scheme in 1950, 984 persons have been granted this benefit.

It is again necessary to outline the conditions under which the allowance is granted and withdrawn: the Tuberculosis Allowance is a discretionary payment made only as long as the sufferer is a public health hazard and conducts himself in the best interests of the campaign against tuberculosis. The allowance must therefore cease when—

- 1. The sufferer ceases to co-operate with the Public Health Authorities;
- 2. He is not infectious and not in need of treatment.

If, when he reaches the condition outlined in 2, he is still incapacitated he is entitled only to the invalid pension.

The following analysis made on 31st December, 1951, gives some idea of the extent to which the allowance helped families with a tuberculous breadwinner—

Number receiving Allowance.		Single at home.	Single (Hosp.)	Married.	Number dependent children.
Males.	Females.				
420	165	177	162	246	331
(585)					

The present cost of the Allowance Scheme throughout Australia is approximately £2,000,000 per annum. The amount received by Queensland patients from 13th July, 1950, to 28th February, 1952, is £228,211.

NEW BUILDINGS.

1. The chronic block at South Brisbane Auxiliary Hospital which should provide some 80 beds for tuberculosis patients is almost completed and nurses' quarters to provide staff for it are also in an advanced stage of construction. This should provide some relief from the present congestion at the Brisbane General Hospital where there is much over-crowding on the balconies.

2. Chermside Sanatorium—pre-fabricated components for the first ward unit have been delivered and erection of these and following units will shortly begin. Foundations for them are completed as is the boiler house, while the laundry building is under construction. It is hoped that the first 150 beds of this sanatorium (pre-fabricated units) will be in occupation within 18 months. The multi-story acute block which will complete the hospital sanatorium unit is at an advanced planning stage and construction is hoped to begin during the coming year.

COUNTRY UNITS.

Plans for 40-bed annexes at Cairns and Townsville are in the hands of the quantity surveyors and it is hoped that tenders will shortly be called for their construction.

Sanatorium ward for tuberculous patients at the Cherbourg Aboriginal Settlement is still in the architect's hands.

REHABILITATION.

Rehabilitation of tuberculous patients continues to be carried out by the Rehabilitation section of the Department of Social Services.





The Chest Clinic, George Street, Brisbane.

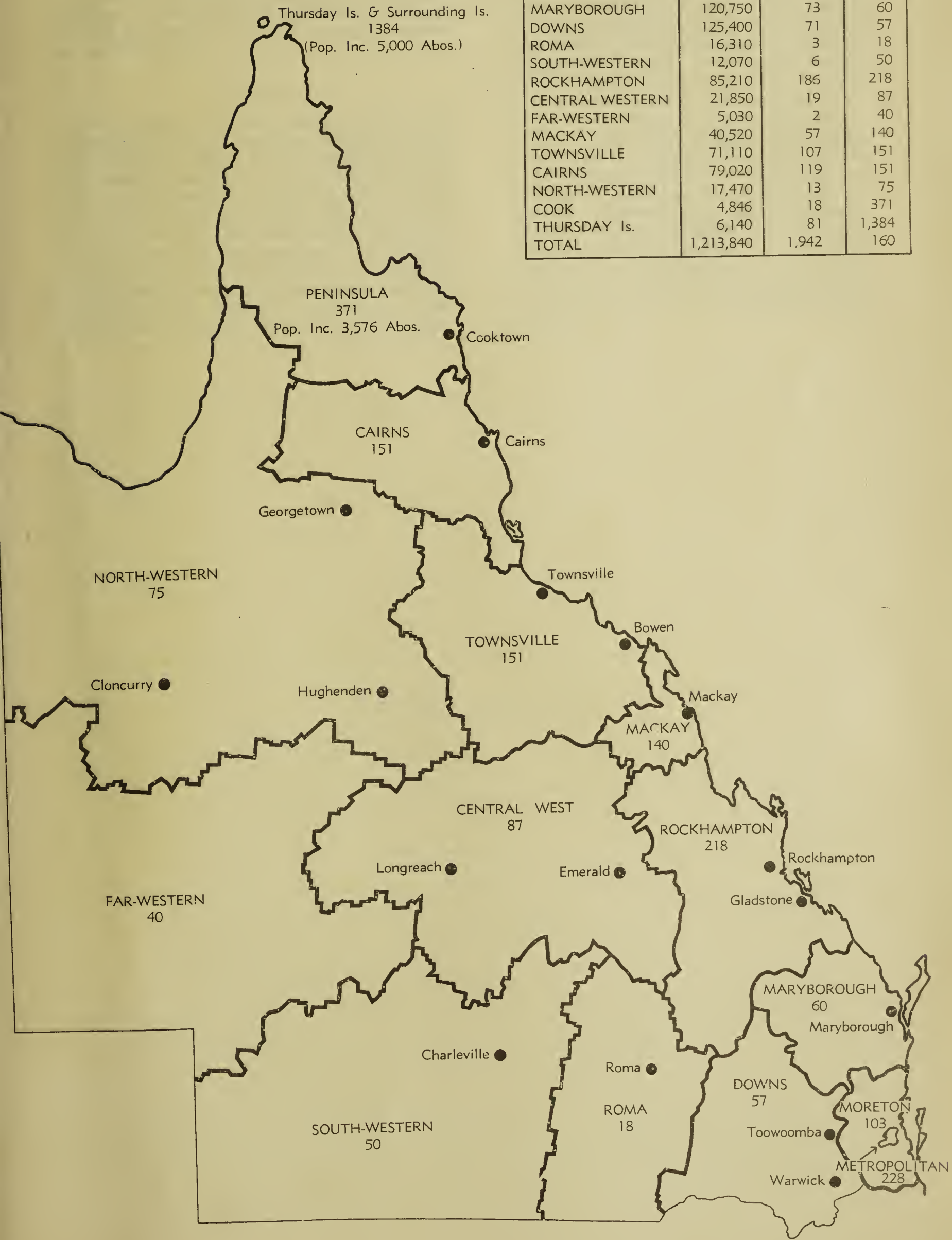




# QUEENSLAND

SHOWING KNOWN T.B. INCIDENCE PER 100,000

	Population as at 30-6-51	Known Cases as at 30-6-52	Incidence per 100,000
METROPOLITAN	450,300	1,025	228
MORETON	157,820	162	103
MARYBOROUGH	120,750	73	60
DOWNS	125,400	71	57
ROMA	16,310	3	18
SOUTH-WESTERN	12,070	6	50
ROCKHAMPTON	85,210	186	218
CENTRAL WESTERN	21,850	19	87
FAR-WESTERN	5,030	2	40
MACKAY	40,520	57	140
TOWNSVILLE	71,110	107	151
CAIRNS	79,020	119	151
NORTH-WESTERN	17,470	13	75
COOK	4,846	18	371
THURSDAY Is.	6,140	81	1,384
TOTAL	1,213,840	1,942	160







Increasing difficulty is being experienced in finding employment for recovered patients as they require limits as to the type of work in which they can engage and it is becoming increasingly important to ensure as far as possible by a period of educational training that patients are fit for work when they commence.

The chief gap at present is that no provision is available for chronic sputum positive cases capable of limited activity. The only solution to this problem—the sheltered workshop—seems as far off as ever.

#### CONCLUSION.

This report is written amidst considerable excitement in the Tuberculosis world about the possibilities of drugs of the Isonicotinic Acid Hydrazide series which have also received widespread and somewhat hysterical publicity in the lay Press. There seems little doubt that this drug will be of considerable value in the treatment of cases of tuberculosis and it is therefore of interest to consider the chances of controlling the disease by treatment alone, as a tendency might exist to abandon an extensive anti-tuberculosis campaign as no longer necessary.

It is interesting in this regard to read the warning expressed by the American Trudeau Society in a report on the possibilities of Isonicotinic Acid Hydrazide, a portion of which is quoted:—

“The introduction of a new drug in the therapy of tuberculosis is likely to raise more questions for a few years than it will answer. There is no knowledge at the present time that Isonicotinic Acid Hydrazide will accomplish more than has been accomplished with Streptomycin and Para-amino-salicylic Acid. It may prove to be a drug of great value. It may be years before its value can be fully assessed. . . . . There is at present no basis for expecting that it or any other available drug can be counted on to reduce the duration of hospital treatment. Rather in most instances at least it may lead to prolongation of hospital treatment since effective chemotherapy may make possible forms of treatment not otherwise possible . . . . . So more intensive case finding than ever will be indicated as only through this means can advantage be taken of improvements in therapy.”



## DIVISION OF INDUSTRIAL MEDICINE.

Director of Industrial Medicine: DOUGLAS GORDON, M.B., B.S. (Q'ld.).

Inspector in Charge: Weil's Disease Control: J. M. KENNEDY.

During the past year the following matters have been dealt with by this Division:—

- |                                                                                                                        |           |
|------------------------------------------------------------------------------------------------------------------------|-----------|
| (1) Reports submitted on industrial premises, industrial health hazards, or to a less extent on administrative matters | .. 43     |
| (2) Clinical reports to medical practitioners, the Insurance Commissioner, &c.                                         | .. 207    |
| (3) Clinical examinations—other than regular routine ones                                                              | .. .. 107 |

### MENTION OF SOME MATTERS OF INTEREST WHICH RECEIVED ATTENTION.

Education of apprentices in safety and health.  
 Medical standards for winding drivers.  
 Metal railway carriages—lead spraying.  
 Use of lead paint in a country town.  
 Lead prospectors—medical examinations.  
 Goggles for motor cyclists.  
 Sterilisation of rubber boots.  
 Dust from mechanical scraper loaders in coal mines.  
 Medical examination of divers.  
 Trichlorethylene degreasing baths.  
 Phosphorous and formaldehyde in rat baits.  
 Dermatitis—local and imported cements.  
 Dr. Audy, Malaya—correspondence re scrub typhus.  
 Arsenical treatment of wall board in schools.  
 Regulations for the medical examination of compressed air workers.  
 The dangers of the newer insecticides.  
 The hazards of galvanising works.  
 Radio-active substances in industry.  
 Zinc granuloma.  
 The correct way to handle weights.  
 Prevention of eye accidents due to foreign bodies.  
 Dust nuisances from various industries.  
 Skin injuries due to handling tobacco leaf.  
 Case hardening.  
 Methyl Bromide fumigation.  
 The design of first aid rooms.  
 Sawdust nuisances in stokeholds.

### COMMITTEES, &C., ATTENDED.

Queensland Health Education Council.  
 National Safety Council.  
 Climatological Committee.  
 Committee of Industrial Hygiene — a sub-committee of the National Health and Medical Research Council.

### PAPERS.

- (1) "Occupational" Fevers, Queensland, 1950-51, Medical Journal of Australia, Vol. 1, 1952, p. 360.  
 (2) Paper to Health Inspectors.  
 (3) Address to Personnel Officers' Association.

### LECTURES.

To medical students and engineering students.  
 Eight "field days" with medical students at the Ipswich Railway Workshops.

### FORENSIC MEDICINE.

Evidence was given in Court on several occasions in Workers' Compensation cases.

At this time of the year it is pertinent to enquire not only what work has been done but whether it has done any good. Applied to a public health service, the enquirer has the right to ask what amount of disease would appear if the public health service in question ceased to exist and to what extent the morale of the people would suffer even if no great amount of disease had been prevented. Strangely enough society has become so complex that the economic effects due to mass panics, strikes, &c., are often more important than the ravages of actual disease.

This line of questioning applied to an industrial medical service in this State leads up some strange by-paths. Owing to the nature of the industry the more orthodox industrial diseases are far from prevalent. Patients suffering from pneumoconiosis (dust disease of the lungs), for example, are seldom seen due to modern working conditions. An exception to this was the discovery of a silicotic secondarily infected by tuberculosis in the abrasive soap making industry—a very small industry in Queensland. The firm concerned had some years ago on the recommendation of this section installed exhaust ventilation. The employees, however, tend to be so slap-dash and careless that it remains to be seen whether such protective devices will prove efficient. By nature of the workings—open cut or shallow and damp pits—most of our mines are safe as far as dust is concerned. Also, since the nineteen-twenties the Australian mining industry has been putting its own house in order. A few years ago a very dusty pit was discovered. The dust was caused mainly by shooting dry coal down a long inclined slope. Most definite efforts



were made to overcome this hazard by spraying the coal with water. The owners were enthusiastic but this enthusiasm quickly became lukewarm at the level of local management and stone-cold as far as the men were concerned. In effect in spite of much water piping the dust remained dangerous. This year dust counting showed that the hazard was gone simply because the seam had "flattened out" and the coal was no longer rolled down a long chute. The abatement of the hazard, however, cannot be claimed to the credit of this section. Unless mining methods change I can see no great incidence of pneumoconiosis in Queensland. This happy state would exist, however, with or without this Division.

An officer of this division now spends all his time going around the more dangerous lead trades collecting specimens of blood and urine. The number at risk is not large—some two hundred. These trades, particularly battery breaking and making, are subject also to strict "Lead Rules". In spite of this attention odd cases of lead poisoning do occasionally occur, mainly because human nature and economic factors favour lead poisoning. In one firm, for instance, constant inspection greatly reduced the danger in the working environment. Owing, however, to the economics of smelting, the men commenced to work gross and regular overtime to the extent of twelve-hour shifts. While this should be deprecated as a constant thing in any process, in a dangerous one it is particularly invidious. All attempts to put on an extra shift or to shift the men who were showing signs of dangerous lead absorption to a lesser paid lead-free job in the same firm were stoutly resisted by the men, who had made a nice calculation concerning overtime, compensation payments and the chances of getting lead poisoning. This attitude can be understood—an attitude which I must say has never to my knowledge been adopted officially by any Union official, but it makes one wonder whether such employees deserve the combined attention of a medical officer, a bacteriologist and a factory inspector. This constant battle to protect fools from themselves illustrates the point that under Australian conditions at any rate industrial medicine produces few victories but mainly compromises.

#### LEAD PAINT.

In the years to come this State may well reap a minor whirlwind from the present increasing use of lead paint. In popular opinion it has always been thought that the Health Acts in this State prohibited the use of lead paint. They do not do so but state that lead paint shall not be used where it can be contacted by children. This restriction has had in the past the effect of keeping lead in household painting to small proportions for it is hardly worth while painting the lower portion of a house with zinc and the upper portion with lead. This tendency after a while encouraged local paint manufacturers to make only small amounts of lead paint, if any at all. In the immediate post war years, though numbers of painters were examined, it was

extremely rare to find a patient showing signs of lead poisoning. One or two events lately suggest that this happy state will not continue. Enquiries show that with the advent of new manufacturers with a penchant for lead paints the well-established firms are now turning to lead paints to compete and large quantities of these paints are bought by unsuspecting home painters. Professional painters faced with a plentiful supply of lead paints buy and use them. In the years to come when this lead paint is scraped off and rubbed off there may be a mild resurgence of plumbism. This whole subject is at present under consideration.

#### OCCUPATIONAL SKIN DISEASES.

Since occupational skin diseases nearly always make up the greater bulk of reported occupational diseases, an effort was made this year to see if it would be practical to try and prevent some of these skin troubles due to working environment. To this end a dissection was made of all the claims for occupational skin disease lodged with the Insurance Commissioner during the twelve months 1950-51. As far as could be seen these claims amounted to 288. Of the causative agents, cement, petroleum products (mainly used to remove grease from hands), sugar cane, alkali soaps and cleansers accounted for most of the cases. Unfortunately there was also a large group of miscellaneous causes each of which accounted for one case only. The patients came from a great variety of trades and represented only a very small percentage of those at risk in these trades. A close survey of the situation led to the inevitable conclusion that with one or two minor exceptions it would not be very practical to engage on any large scale campaign to try to cut down the number of occupational skin diseases. For instance, in the case of cement, some 40 cases came from 11 occupations. It is obvious that the total number of people working in these occupations is enormous compared to the number who contracted dermatitis, and furthermore no particular action or process seemed to be responsible for these people getting a skin disease. In other trades such as cane boils among canecutters the methods of prevention are too complex to persuade canecutters overnight to adopt them.

There are some pleasing aspects about this investigation. The total incidence of occupational skin claims seem low—about 0.7 cases per 1,000 employees—and the period of disability is also short compared with figures quoted from other industrial countries. The fact that this is mainly a primary producing state is reflected in the type of irritants which have led to skin trouble, complex chemical substances being rarely found as a cause of an occupational skin disease. Once again this means that very little of a practical nature can be done in the matter.

#### FEVERS.

The advent of the Queensland Institute of Medical Research into North Queensland has brought to light more fever cases than ever before. This year there is a total of 440 cases



handled by this section from this area and a further 109 cases from Southern Queensland. In Southern Queensland only cases giving a positive result were recorded. It has been pleasing to note that two or three strains hitherto not found in North Queensland have been brought to light by Dr. Sinnamon's work. It cannot be claimed, however, that these discoveries have solved the P.U.O. problem in northern portions of the State for it will be noted from the tables that of the 440 cases, 287 still remain undiagnosed and are recorded under the heading "P.U.O." It has also been suggested that since quite a number of people who are not cane workers get one of the leptospiroses (this year, for example, there were 43 non-cane workers to 33 cane workers), the Weil's disease inspectors are no longer necessary. It has also been mentioned that in future policing could be left to the milling interests. All this matter has been threshed over before but it perhaps could be briefly mentioned again. It has been our experience that Weil's disease inspectors are required for a few weeks in odd years when rainfall and other seasonal conditions are somewhat unusual. Unfortunately nobody can foretell when these years of epidemicity will occur and it is necessary to keep inspectors there on the job all the time.

One reason why cane worker leptospiroses are low may be due to the work of the Weil's disease inspectors. I think this is an inference which does not require much charity to attribute to them.

The idea of the milling interests policing the regulations cannot from past experience, be recommended. At the moment practically all cane is burnt whether for health reasons or not. The unfortunate part is that the very time when Weil's disease becomes a very potent danger is during a wet week or two when it is oftentimes impossible to get a burn and/or an efficient burn, and it is just during this same type of weather when the mill is pushed for cane to keep going and avoid financial loss. In such weather the mill, the grower and the canecutter all wish to put in green cane to avoid losing money by stopping work. In such circumstances a Weil's disease inspector is the only person who has the slightest interest in preventing cane being cut green or being cut after a poor burn. If anyone doubts the morale-building effect of the presence of Weil's disease inspectors in North Queensland I would refer them to the 1950 season when, following an epidemic of Weil's disease with one death, the whole industrial movement in North Queensland was aflame.

Prompt and drastic measures were taken to settle the disturbance. Any suggestion therefore to remove the Weil's disease inspectors comes from a failure to understand the industrial and financial implications of Weil's disease control.

It is interesting to note in the tables that leptospirosis is recorded from Mossman. Prior to this there has been only one case recorded there. The present 15 cases are due mainly to discovery of the newer strains.

TABLE XXXVII.					
LEPTOSPIROSIS.					
			Cane Worker.		Non Cane Worker.
Thursday Island	..	..	..	2	
Mossman ..	..	..	6	9	
Tableland ..	..	..	..	1	
Cairns ..	..	..	..	5	
Gordonvale ..	..	..	2	3	
Babinda ..	..	..	15	5	
Innisfail ..	..	..	10	9	
Tully ..	..	..	..	5	
Ingham ..	..	..	..	2	
Townsville ..	..	..	..	1	
North-West Queensland	..	..	..	..	
Mackay ..	..	..	..	1	
Total ..	..	..	33	43	
P.U.O.					
Thursday Island	..	..	..	17	
Cooktown ..	..	..	..	6	
Mossman ..	..	..	..	26	
Tableland ..	..	..	..	38	
Cairns ..	..	..	..	32	
Gordonvale ..	..	..	..	15	
Babinda ..	..	..	..	14	
Innisfail ..	..	..	..	66	
Tully ..	..	..	..	14	
Ingham..	..	..	..	3	
Townsville ..	..	..	..	19	
North-West Queensland	..	..	..	6	
Mackay..	..	..	..	31	
Total ..	..	..	..	287	
SCRUB TYPHUS.					
Thursday Island	..	..	..	1	
Mossman ..	..	..	..	7	
				*1	
Tableland ..	..	..	..	2	
Cairns ..	..	..	..	12	
Gordonvale ..	..	..	..	1	
				*2	
Babinda ..	..	..	..	2	
Innisfail ..	..	..	..	6	
Tully ..	..	..	..	2	
				*2	
Ingham..	..	..	..	..	
Mackay {	..	..	..	1	
(doubtful case)	..	..	..	1	
Total ..	..	..	..	40*	
* Includes one death at Tully.					
TICK OR MURINE TYPHUS.					
Thursday Island	..	..	..	1	Clinical Cases.
Mossman ..	..	..	..	1	
Tableland ..	..	..	..	3	
Cairns ..	..	..	..	2	
Innisfail ..	..	..	..	1	
North-West Queensland	..	..	..	1	
Mackay..	..	..	..	1	
Total ..	..	..	..	10	
Q FEVER.					
Mossman ..	..	..	..	4	
Tableland ..	..	..	..	1	
Gordonvale ..	..	..	..	3	
Innisfail ..	..	..	..	2	
Ingham..	..	..	..	1	
Townsville ..	..	..	..	3	
Mackay..	..	..	..	2	
Total ..	..	..	..	16	
LEPTOSPIROSIS (POMONA TYPE).					
Gordonvale ..	..	..	..	1	
North-West Queensland	..	..	..	1	
Mackay..	..	..	..	6	
Total ..	..	..	..	8	
BRUCELLOSIS.					
Innisfail ..	..	..	..	1	
Ingham..	..	..	..	1	
Townsville ..	..	..	..	1	
Total ..	..	..	..	3	
Total Cases North Queensland				..	440

TABLE XXXVIII.  
THURSDAY ISLAND.  
Total—21.

Month of Onset.								Leptospirosis.		P.U.O.	Scrub Typhus.	Murine Typhus.
								Cane-worker.	Non Cane-worker.			
1951—												
August	..	..	..	..	..	..	..	..	..	..	1	..
September	..	..	..	..	..	..	..	..	..	..	..	..
October	..	..	..	..	..	..	..	..	..	1	..	1
November	..	..	..	..	..	..	..	..	1	7	..	..
December	..	..	..	..	..	..	..	..	..	..	..	..
1952—												
January	..	..	..	..	..	..	..	..	..	..	..	..
February	..	..	..	..	..	..	..	..	..	4	..	..
March	..	..	..	..	..	..	..	..	..	1	..	..
April	..	..	..	..	..	..	..	..	..	1	..	..
May	..	..	..	..	..	..	..	..	1	1	..	..
June	..	..	..	..	..	..	..	..	..	2	..	..
Total	..	..	..	..	..	..	..	..	2	17	1	1

TABLE XXXIX.  
COOKTOWN.  
Total—6.

Month of Onset.								P.U.O.
October, 1951	..	..	..	..	..	..	..	2
March, 1952	..	..	..	..	..	..	..	4
Total	..	..	..	..	..	..	..	6

TABLE XL.  
MOSSMAN.  
Total—54

Month of Onset.							Leptospirosis.		P.U.O.	Scrub Typhus.	Murine Typhus.	Q Fever.
							Cane-worker.	Non Cane-worker.				
1951—												
May	..	..	..	..	..	..	..	1	..	2	..	..
June	..	..	..	..	..	..	..	..	1	..	..	2
July	..	..	..	..	..	..	..	..	2	..	..	..
August	..	..	..	..	..	..	..	..	..	..	..	..
September	..	..	..	..	..	..	..	..	1	..	..	..
October	..	..	..	..	..	..	..	2	2	..	..	..
November	..	..	..	..	..	..	2	1	4	..	..	..
December	..	..	..	..	..	..	3	1	1	1	..	1
1952—												
January	..	..	..	..	..	..	..	2	..	..	..	..
February	..	..	..	..	..	..	..	2	5	*1	..	..
March	..	..	..	..	..	..	1	..	2	3	..	1
April	..	..	..	..	..	..	..	..	2	..	..	..
May	..	..	..	..	..	..	..	..	4	1	1	..
June	..	..	..	..	..	..	..	..	2	..	..	..
Total	..	..	..	..	..	..	6	9	26	8	1	4

\* Clinically and occupationally strongly positive, laboratory findings negative.  
Cases from Mossman the diagnoses of which have not yet been finalised—Five (5).



TABLE XLI.  
ATHERTON TABLELAND.  
Total—45

Month of Onset.							Leptospirosis.		P.U.O.	Scrub Typhus.	Tick or Murine Typhus.	Q Fever.
							Cane-worker.	Non Cane-worker.				
1951—												
February	..	..	..	..	..	..	..	..	2	..	..	..
March	..	..	..	..	..	..	..	..	1	..	..	..
April	..	..	..	..	..	..	..	..	1	..	..	..
May	..	..	..	..	..	..	..	..	1	..	2	..
June	..	..	..	..	..	..	..	..	2	..	1	..
July	..	..	..	..	..	..	..	..	3	1	..	..
August	..	..	..	..	..	..	..	..	1	..	..	..
September	..	..	..	..	..	..	..	..	4	..	..	..
October	..	..	..	..	..	..	..	..	2	..	..	1
November	..	..	..	..	..	..	..	..	5	..	..	..
December	..	..	..	..	..	..	..	..	1	..	..	..
1952—												
January	..	..	..	..	..	..	..	1	..	..	..	..
February	..	..	..	..	..	..	..	..	4	..	..	..
March	..	..	..	..	..	..	..	..	3	..	..	..
April	..	..	..	..	..	..	..	..	3	1	..	..
May	..	..	..	..	..	..	..	..	5	..	..	..
June	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	1	38	2	3	1

Cases from The Tableland the diagnoses of which have not yet been finalised—One (1).

TABLE XLII.  
CAIRNS.  
Total—51.

Month of Onset.								Leptospirosis.		P.U.O.	Scrub Typhus.	Murine Typhus.
								Cane-worker.	Non Cane-worker.			
1951—												
March	..	..	..	..	..	..	..	..	..	1	..	..
April	..	..	..	..	..	..	..	..	..	..	2	..
May	..	..	..	..	..	..	..	..	..	..	2	..
June	..	..	..	..	..	..	..	..	..	2	1	..
July	..	..	..	..	..	..	..	..	..	1	..	..
August	..	..	..	..	..	..	..	..	..	..	..	..
September	..	..	..	..	..	..	..	..	..	2	..	..
October	..	..	..	..	..	..	..	..	..	4	..	..
November	..	..	..	..	..	..	..	..	..	6	..	..
December	..	..	..	..	..	..	..	..	..	..	..	..
1952—												
January	..	..	..	..	..	..	..	..	2	7	3	..
February	..	..	..	..	..	..	..	..	1	2	..	..
March	..	..	..	..	..	..	..	..	..	1	..	..
April	..	..	..	..	..	..	..	..	1	2	2	1
May	..	..	..	..	..	..	..	..	1	2	1	1
June	..	..	..	..	..	..	..	..	..	2	1	..
Total	..	..	..	..	..	..	..	..	5	32	12	2

Cases from the Cairns area the diagnoses of which have not yet been finalised—Two (2).

TABLE XLIII.  
GORDONVALE.  
Total—27.

Month of Onset.							Leptospirosis.		P.U.O.	Scrub. Typhus.	Q Fever.	Lepto-spirosis Pomona.
							Cane-worker.	Non Cane-worker.				
1951—												
June	..	..	..	..	..	..	..	..	2	..	..	..
July	..	..	..	..	..	..	..	..	3	..	..	..
August	..	..	..	..	..	..	..	..	..	..	..	..
September	..	..	..	..	..	..	1	..	1	..	1	1
October	..	..	..	..	..	..	..	1	..	..	..	..
November	..	..	..	..	..	..	..	..	3	..	..	..
December	..	..	..	..	..	..	..	..	..	..	..	..
1952—												
January	..	..	..	..	..	..	..	..	2	..	..	..
February	..	..	..	..	..	..	..	..	..	..	..	..
March	..	..	..	..	..	..	..	2	..	{ *1 }	2	..
April	..	..	..	..	..	..	..	..	3		..	..
May	..	..	..	..	..	..	1	..	..		..	..
June	..	..	..	..	..	..	..	..	1	..	..	..
Total	..	..	..	..	..	..	2	3	15	3	3	1

\* Clinically and occupationally strongly positive, laboratory findings negative.  
Cases from Gordonvale the diagnoses of which have not yet been finalised—Four (4).

TABLE XLIV.  
BABINDA.  
Total—36.

Month of Onset.										Leptospirosis.		P.U.O.	Scrub Typhus.
										Cane-worker.	Non. Cane-worker.		
1951—													
July	..	..	..	..	..	..	..	..	..	..	..	1	..
August	..	..	..	..	..	..	..	..	..	..	..	..	..
September	..	..	..	..	..	..	..	..	..	5	..	..	..
October	..	..	..	..	..	..	..	..	..	4	1	5	..
November	..	..	..	..	..	..	..	..	..	1	..	3	..
December	..	..	..	..	..	..	..	..	..	1	2	2	2
1952—													
January	..	..	..	..	..	..	..	..	..	..	2	1	..
February	..	..	..	..	..	..	..	..	..	..	..	1	..
March	..	..	..	..	..	..	..	..	..	1	..	1	..
April	..	..	..	..	..	..	..	..	..	1	..	..	..
May	..	..	..	..	..	..	..	..	..	2	..	..	..
June	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	15	5	14	2

Cases from Babinda the diagnoses of which have not yet been finalised—Three (3).

TABLE XLV.  
INNISFAIL.  
Total—95.

Month of Onset.										Leptospirosis.		P.U.O.	Scrub Typhus.	Murine or Tick Typhus.	Q Fever.	Brucellosis.
										Cane-worker.	Non Cane-worker.					
1951—																
June	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..
July	..	..	..	..	..	..	..	..	..	1	..	3	1	..	..	..
August	..	..	..	..	..	..	..	..	..	2	..	14	..	..	..	..
September	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..
October	..	..	..	..	..	..	..	..	..	1	1	7	..	1	..	..
November	..	..	..	..	..	..	..	..	..	1	..	3	1	..	..	1
December	..	..	..	..	..	..	..	..	..	..	..	4	1	..	..	..
1952—																
January	..	..	..	..	..	..	..	..	..	1	1	5	..	..	..	..
February	..	..	..	..	..	..	..	..	..	2	1	12	..	..	..	..
March	..	..	..	..	..	..	..	..	..	1	3	2	..	..	..	..
April	..	..	..	..	..	..	..	..	..	1	1	4	2	..	..	..
May	..	..	..	..	..	..	..	..	..	..	1	3	1	..	1	..
June	..	..	..	..	..	..	..	..	..	..	1	4	..	..	1	..
Total	..	..	..	..	..	..	..	..	..	10	9	66	6	1	2	1

Cases from the Innisfail area the diagnoses of which have not yet been finalised—Seven (7).

TABLE XLVI.  
TULLY.  
Total—23.

Month of Onset.										Leptospirosis.		P.U.O.	Scrub Typhus.
										Cane-worker.	Non Cane-worker.		
1951—													
July	..	..	..	..	..	..	..	..	..	..	..	..	..
August	..	..	..	..	..	..	..	..	..	..	..	4	..
September	..	..	..	..	..	..	..	..	..	..	..	2	..
October	..	..	..	..	..	..	..	..	..	..	..	..	..
November	..	..	..	..	..	..	..	..	..	..	..	1	..
December	..	..	..	..	..	..	..	..	..	..	..	..	..
1952—													
January	..	..	..	..	..	..	..	..	..	..	..	..	..
February	..	..	..	..	..	..	..	..	..	..	..	..	..
March	..	..	..	..	..	..	..	..	..	..	3	2	{ *1Died
April	..	..	..	..	..	..	..	..	..	..	..	3	
May	..	..	..	..	..	..	..	..	..	..	2	1	
June	..	..	..	..	..	..	..	..	..	..	..	1	
Total	...	..	..	..	..	..	..	..	..	..	5	14	4

\* Clinically and occupationally strongly positive, but laboratory investigations not performed.  
Cases from the Tully area the diagnoses of which have not yet been finalised—Four (4).



TABLE XLVII.

INGHAM.  
Total—7.

Month of Onset.												Leptospirosis.		P.U.O.	Q Fever.	Brucellosis.
												Cane-worker.	Non Cane-worker.			
1951—																
July	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
August	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
September	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
October	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
November	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
December	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1925—																
January	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
February	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
March	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
April	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
May	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
June	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	2	3	1	1

Cases from the Ingham area the diagnoses of which have not yet been finalised—One (1).

TABLE XLVIII.

TOWNSVILLE.  
Total—24.

Month of Onset.												Leptospirosis.		P.U.O.	Q Fever.	Brucellosis.
												Cane-worker.	Non Cane-worker.			
1951—																
May	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
June	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..
July	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
August	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
September	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
October	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
November	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..
December	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1952—																
January	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1
February	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..
March	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	..
April	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
May	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..
June	..	..	..	..	..	..	..	..	..	..	..	..	..	3	1	..
Total	..	..	..	..	..	..	..	..	..	..	..	..	1	19	3	1

TABLE XLIX.

NORTH-WEST QUEENSLAND.  
Total—8.

Month of Onset.														P.U.O.	Murine Typhus.	Lepto-spirosis Pomona.
1952—																
January	..	..	..	..	..	..	..	..	..	..	..			..	..	1
February	..	..	..	..	..	..	..	..	..	..	..			2	..	..
March	..	..	..	..	..	..	..	..	..	..	..			..	..	..
April	..	..	..	..	..	..	..	..	..	..	..			4	..	..
May	..	..	..	..	..	..	..	..	..	..	..			..	1	..
June	..	..	..	..	..	..	..	..	..	..	..			..	..	..
Total	..	..	..	..	..	..	..	..	..	..	..			6	1	1

TABLE L.  
MACKAY.  
Total—43

Month of Onset.					Leptospirosis.		P.U.O.	Scrub Typhus.	Murine Typhus.	Q Fever.	Lepto-spirosis Pomona.
					Cane-worker.	Non Cane-worker.					
1951—											
January	..	..	..	..	..	..	1	..	..	..	..
February	..	..	..	..	..	..	4	..	..	..	..
March	..	..	..	..	..	..	..	..	1	..	1
April ..	..	..	..	..	..	..	1	..	..	..	..
May ..	..	..	..	..	..	..	..	..	..	..	..
June ..	..	..	..	..	..	..	..	..	..	..	..
July ..	..	..	..	..	..	..	..	..	..	..	..
August	..	..	..	..	..	..	3	..	..	1	1
September	..	..	..	..	..	..	4	..	..	..	..
October	..	..	..	..	..	..	1	..	..	..	..
November	..	..	..	..	..	..	..	..	..	..	..
December	..	..	..	..	..	..	..	..	..	..	..
1952—											
January	..	..	..	..	..	..	2	..	..	..	1
February	..	..	..	..	..	..	1	..	..	..	1
March	..	..	..	..	..	..	4	..	..	..	1
April ..	..	..	..	..	..	..	5	*1	..	..	..
May ..	..	..	..	..	..	1	4	..	..	..	..
June ..	..	..	..	..	..	..	1	1	..	1	1
Total					..	1	31	2	1	2	6

\* Doubtful case.  
Cases from Mackay the diagnoses of which have not yet been finalised—One (1).

FEVERS IN SOUTHERN QUEENSLAND.  
In Southern Queensland brucellosis is again quite prominent and as in previous years in many cases the occupations of the patients seem to have little to do with their contracting the disease.

TABLE LI.

FEVER CASES, SOUTHERN QUEENSLAND (TOTAL 109).

Occupations of Patients.

Q FEVER—(Total 41).

Abattoir worker	..	..	..	..	22
Meat inspector	..	..	..	..	1
Clerk at abattoir	..	..	..	..	2
Stock inspector	..	..	..	..	1
Slaughterman ..	..	..	..	..	1
Dairy farmer ..	..	..	..	..	2
Dairy farm labourer	..	..	..	..	2
Dairy and pig farmer	..	..	..	..	1
Farmer ..	..	..	..	..	4
Labourer ..	..	..	..	..	1
Bulldozer driver	..	..	..	..	1
Timber worker	..	..	..	..	1
Shearer ..	..	..	..	..	1

Occupation of one case not known.

BRUCELLOSIS—(Total 19).

Dairy farmer ..	..	..	..	..	4
Grazier and farmer	..	..	..	..	1
Abattoir worker	..	..	..	..	4
Domestic duties	..	..	..	..	5
Electrical engineer	..	..	..	..	1
Student ..	..	..	..	..	1
Cleaner ..	..	..	..	..	1
Grocer's assistant	..	..	..	..	1
Cafe employee	..	..	..	..	1

LEPTOSPIROSIS (POMONA TYPE)—(Total 23).

Dairy farmer ..	..	..	..	..	5
Farmer ..	..	..	..	..	1
Farm labourer	..	..	..	..	4
Piggery labourer	..	..	..	..	2
Abattoir worker	..	..	..	..	5
Slaughterman ..	..	..	..	..	1
Bacon factory employee	..	..	..	..	2
Pensioner living on dairy farm	..	..	..	..	1
Child living on pig farm	..	..	..	..	1
Drover ..	..	..	..	..	1

LEPTOSPIROSIS—(Total 8).

Abattoir worker	..	..	..	..	1
Stock inspector	..	..	..	..	1
Farm labourer	..	..	..	..	1
Employee of Veterinary Section, Department of Commerce and Agriculture	..	..	..	..	1
Sewer worker ..	..	..	..	..	1
Student ..	..	..	..	..	1
Fish shop employee	..	..	..	..	1
Turner at Tram Depot	..	..	..	..	1

MURINE TYPHUS—(Total 18).

Domestic duties	..	..	..	..	2
Farmer ..	..	..	..	..	2
Engineer ..	..	..	..	..	1
Timber worker	..	..	..	..	1
Main Roads Department employee	..	..	..	..	1
Sand blaster ..	..	..	..	..	1
Wharf labourer	..	..	..	..	2
Produce Agency employee	..	..	..	..	1
Waitress ..	..	..	..	..	1
Shop assistant	..	..	..	..	1
Panel beater ..	..	..	..	..	1
Shunter ..	..	..	..	..	1
Nurse ..	..	..	..	..	1
Patient at Peel Island	..	..	..	..	1
Schoolgirl ..	..	..	..	..	1

This Division has devoted quite a deal of time to investigating the occupational epidemiology of cases of fever in North Queensland and in



the South, and such work has become quite a percentage of time spent by Weil's disease inspectors. No excuse is made for this preoccupation with this class of case for it is quite obvious that if the fever group can produce 440 recorded cases in North Queensland nearly all of whom have been hospitalised, then it must follow that these diseases produce a great deal of morbidity, take up a great deal of medical and hospital time and are very definitely of economic importance. Compared with a few cases occurring each year due to lead or some other industrial toxin and compared with a half dozen to a dozen patients appearing with pneumoconiosis, mostly due to exposure in the past, it is obvious that the fevers are of much more importance to the larger number of patients and to the economy of industry and State.

Unfortunately to date very little has been discovered whereby some practical simple procedure can be used to prevent these fevers.

#### INDUSTRIAL ACCIDENTS.

Another matter which has always occupied the attention of this Division and has been hammered at in previous reports is the problem of the industrial accident. Compared with industrial accidents, industrial diseases are hardly worth mentioning. The big drain on industry and medical services comes from the industrial accident. As has been mentioned in the past so little is known of what is happening in this regard that reliable statistics giving information

as to where industrial accidents are occurring have not hitherto been available. Fortunately this year a glimmer of hope has appeared in that the National Safety Council has taken the matter up with the Government Statistician and already some pointers have been gleaned which suggest that the younger worker, particularly in the metal trades, is rather prone to accidents. Unfortunately as yet, we cannot say whether these accidents are occupational ones or otherwise. In the years to come statistics are going to be collected somewhat differently and when some figures are available we may then know what industries produce the most accidents and why on the average such accidents occur. Drives to cut down these accidents can then be concentrated on those particular industries and particularly dangerous processes in them. It is already known, for instance, that sawmills produce more than their fair share of accidents. There is some indication that these occur particularly in mills which are over-crowded and lack plenty of space and where good housekeeping is non-existent. A drive will be launched to try and do something about this matter.

#### RESUME.

Activity of this division probably saves the taxpayer quite a deal of money in a way perhaps that was not visualised when the division was established. It has had the effect of damping down an enthusiasm for finding occupational diseases behind every industrial bush and has also placed on a more factual basis the diagnosis of industrial disease.



## WEIL'S DISEASE CAMPAIGN.

## NORTHERN CANE AREAS.

Intensive activities of the Campaign staff during the year covered the following sugar mill areas:—South Johnstone; Goondi; Mourilyan; Tully; Victoria; Macknade; Babinda; Mulgrave.

Necessary attention was also directed as required to Hambleton, Mossman, and Invicta mill areas.

Field duties during the harvesting period, which was somewhat shorter than the previous year, entailed inspections of 2,590 fields on 2,267 farms.

Details of cane burned are shown in Table LII.

During the slack period between harvests, from January to June, 1952, a total of 1,770 farms were inspected by staff members who advised re farm cleaning measures and the control of rat harbourage.

Throughout the year follow-up work was carried out on fever cases reported from within the coastal belt from Ingham to Mossman—this area comprising the shires of Hinchinbrook, Cardwell, Johnstone, Mulgrave, and Douglas, to which the provisions of "The Rat Prevention and Destruction Regulations" specially apply.

The functioning of the Field Station of the Queensland Institute of Medical Research at Innisfail during the past year led to intensive work on northern fevers and full co-operation was given to this unit. This entailed much additional field and follow-up work and in all 135 cases of reported fever were contacted and reports furnished.

Field work on every case reported to the campaign during the year has been completed and none is outstanding.

During the period under review, climatic conditions have been very good in all northern cane areas.

Throughout the cane crushing period harvesting operations were maintained with a minimum of interruption, and since January of the present year cane growth has been continuous with a complete absence of flood rains and consequently no lengthy hold-up of farming operations. It can be said that the field conditions prevailing at the commencement of crushing for the 1952 harvest were the best for many years from the health aspect.

Particular care was necessary and exercised during the early weeks of crushing in June and July last year. Lists of low farms considered dangerous to health under wet conditions were furnished to mills where necessary and Schedule A orders under the relevant Regulations were issued as required by local conditions prevailing at time of harvest.

Every opportunity was taken during the year to advise cutters and others on the need for proper protective clothing in the canefields during wet weather, particularly the wearing of boots and in the case of cutters, long trousers. Too many newcomers to the industry are satisfied to work in the field unshod and with singlet and shorts only.

Good results usually followed when the shortcomings of this mode of dress for the work in hand was stressed and demonstrated in the field.

The sanitation of barracks is, in general, fairly good but the standard has deteriorated somewhat over recent years due mainly to lack of materials and labour. As these factors no longer apply it is now possible to expect steady improvement as defects are brought to the notice of owners. The fact that many barracks, owing to housing shortage, are now occupied all the year round, usually by new Australians during the slack period between crushing, suggests the need for periodical check.

Numerous cases of soil pollution in canefields were noted during the year almost invariably by newcomers, and necessary action was promptly taken.

It may become necessary to recommend prosecution for future serious breaches of the Regulations in this respect.

Cane Pest Boards in the various mill areas gave additional attention to rodent control during the past twelve months. A substantial increase in the number of baits distributed over last year's figures may be noted.

Number and type of baits favoured by each Board is shown in Table LIII.

It would appear that thallium sulphate wheat baits have regained their position now that ample supplies are again available and despite their high cost. Conversely, zinc phosphide wheat baits, which largely replaced thallium during the war years and after, now take last place.

It is noteworthy that phosphorus paste on bread is again becoming popular with some Boards, and is probably the best dry weather bait in the canefields under proper conditions of preparation and distribution.

Generally, satisfactory results in controlling the rat in the field can only be obtained where methodical and regular distribution of baits is made at the proper times and places and in conjunction with the control of harbourage.

A rapid expansion of all northern cane areas is in progress and many new farms cut from virgin scrub land have been added. The need for special attention to these sections have been kept in mind and close contact has been maintained by frequent inspections. Many cases of fever listed during the period under review have come from new land newly cleared and broken.

The various Local Authorities in the territory covered by Campaign activities have carried out rat control measures throughout the year. Baits are at all times available to householders and others and good advantage has been taken of this facility.

Attention has been given to rubbish tips, river banks, and other likely rat breeding grounds under Council control.

The year now ended has been marked by the absence of any hold-up of harvesting due to the application of health regulations.

Full co-operation has been received from mill officials, A.W.U., growers and mill representatives, in the various districts and, almost without exception, farmers generally.

At all times, differences of opinion have been settled amicably and good relations maintained.



TABLE LII.

SHOWING DETAILS OF CANE BURNED UNDER HEALTH REGULATIONS IN THE WEIL'S DISEASE CONTROL AREAS.

Mill Area.					Total Area Harvested.	Total Crushed.	Total Burned.		Burned under Health Regulations.	
					Acres.	Tons.	Acres.	Tons.	Tons.	Acres.
Goondi	..	..	..	..	7,697	185,098	7,678	184,313	7,872	429
Tully	..	..	..	..	12,119	248,071	12,035	246,374	165,380	8,100
Mourilyan	..	..	..	..	8,628	181,443	8,610	181,060	2,200	250
Johnstone	..	..	..	..	11,029	272,658	10,982	271,378	9,917	586
Macknade	..	..	..	..	12,140	249,252	12,119	248,973	19,106	2,400
Victoria	..	..	..	..	13,447	279,713	13,382	278,302	15,029	1,761
Babinda	..	..	..	..	10,530	187,205	10,454	185,846	27,647	1,562
Mulgrave	..	..	..	..	10,569	223,974	10,488	222,363	94,756	6,318
Hambledon	..	..	..	..	8,765	197,121	8,750	196,927	10,000	1,003
Invicta (Ingham Line)	..	..	..	..	3,240	68,549	3,240	68,549	21,600	1,200
Totals	..	..	..	..	98,164	2,093,084	97,738	2,084,085	373,507	23,609

TABLE LIII.

SHOWING BAITS DISTRIBUTED BY PEST BOARDS FOR RODENT DESTRUCTION.  
Numbers and Types.

Mill Area.								Phosphorus on Bread.	Thallium Sulphate. (Wheat.)	Zinc Phosphide. (Wheat.)	Other.
Goondi	..	..	..	..	..	..	..	..	493,000	541,000	5 lbs. Phos. Syrup
Tully	..	..	..	..	..	..	..	..	600,000	..	..
Mourilyan	..	..	..	..	..	..	1,117,350	1,625,950	..	..	6 oz. Strychnine
Johnstone	..	..	..	..	..	..	275,000	860,000	..	..	..
Macknade	..	..	..	..	..	..	..	1,600,000	..	..	..
Victoria	..	..	..	..	..	..	..	1,786,800	..	..	..
Babinda	..	..	..	..	..	..	1,750,000	1,132,544	..	..	..
Mulgrave	..	..	..	..	..	..	300,000	618,000	..	..	..
Hambledon	..	..	..	..	..	..	..	592,512	266,880	..	..
Invicta (Ingham Line)	..	..	..	..	..	..	..	242,432	..	..	..
Mossman	..	..	..	..	..	..	..	716,800	..	..	10 lb. Phos. Syrup 5 oz. Strychnine
Totals	..	..	..	..	..	..	3,442,350	10,268,038	807,880	..	..

TABLE LIV.

SHOWING DETAILS OF LABOUR FORCE IN THE CANE AREAS SUBJECT TO WEIL'S DISEASE CONTROL.

Mill Area.								Cutters signed on.	Number of Gangs.	Stand-over Cane.	Duration of Crushing.
										Acres.	Weeks.
Goondi	..	..	..	..	..	..	..	256	41	..	22
Tully	..	..	..	..	..	..	..	500	74	221	21
Mourilyan	..	..	..	..	..	..	..	253	48	14	22
Johnstone	..	..	..	..	..	..	..	450	69	135	26
Macknade	..	..	..	..	..	..	..	369	55	51	24
Victoria	..	..	..	..	..	..	..	355	62	89	20
Babinda	..	..	..	..	..	..	..	275	84	67	22
Mulgrave	..	..	..	..	..	..	..	365	115	30	21
Hambledon	..	..	..	..	..	..	..	540	83	20	20
Invicta (Ingham Line)	..	..	..	..	..	..	..	91	4	..	21
Totals	..	..	..	..	..	..	..	3,454	635	627	..

## DIVISION OF MATERNAL AND CHILD WELFARE.

Director: H. C. MURPHY, M.B., B.S.

Deputy Director: P. M. JACKSON, M.B., B.S.

Part-time Pre-school Child Health Officer: T. HENRY R. MATHEWSON, M.B., Ch.B.

Superintendent: D. BARDSLEY, A.T.N.A., F.C.N.A.

Deputy Superintendent: A. JENKINSON, A.T.N.A.

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### INTRODUCTION.

The increasing emphasis which is now being placed on the Public Health aspect of nursing and indeed of medicine also, brings the work of the Maternal and Child Welfare Service into a much more prominent position than it occupied in the early years of its development.

At the Conference of the Child Welfare Committee of the National Health and Research Council held in May of this year, it was pointed out that the pattern of Public Health nursing in Australia has grown almost exclusively in the direction of the specialised care of the mother and the child from birth to school age rather than into the many and varied fields of social activity shown by its counterpart in England and the United States of America. The question of whether the Child Welfare nurse, as she is trained in Australia, is able to meet all the felt needs of the community was one of the subjects brought forward for discussion at the Conference referred to.

There is no doubt that one of the primary needs in any community is education in Public Health and although it is realised that this education can be and is being advanced in many ways by films, posters, lectures and newspaper articles, amongst others, the most effective form of teaching in respect of maternal and child welfare is by direct personal contact in which the material to be taught is presented by the teacher when the pupil is in a receptive frame of mind and which is graded to his or her degree of intelligence as well as being designed to meet his individual need at the time. It can be stated with confidence that the staffing of the Maternal and Child Welfare Centres and Homes in Queensland has always been arranged with the educational aspect of the work in mind. As each

group of nurses is trained, emphasis is placed on the fact that their work includes a considerable amount of parent teaching as well as the effective issue of advice and instruction and as far as is possible sufficient staff has been provided to carry this into effect. In addition, nursing staff have always been encouraged to accept opportunities for teaching with outside groups, such as Girl Guides and similar organisations, Women's Clubs and the like, and a great deal of effective work has been carried out in this field over the years. It is pleasing to report that as part of the plan of educating the public in preventive health measures, it has been found practicable this year to extend the lecture-demonstrations to school girls into two country Centres—Mt. Morgan and the big North-west area served by the Maternal and Child Welfare Railway Car. The popularity of this series of mothercraft talks in schools was shown in no uncertain manner when the series was commenced at Winton as an experiment. Within two weeks every town in the itinerary of the Rail Car had requested that the talks be extended to their schools and great interest is being shown by the ordinary citizen as well as by parents and children.

A further contribution to the Public Health programme of the future has been the response of this Service to the expansion of Child Welfare work in the training of medical students. The opportunity the students now have of accompanying the experienced Social Welfare Sisters into the homes of mothers with small or difficult babies, should prove invaluable to future generations of doctors.

At least 75 per cent. of any Public Health work, particularly in its purely preventive aspect, must lie in the care and feeding of mother and child and the teaching of parents in regard to these matters as well as general health care of the whole family. The training and experience covered by the permanent trained staff of this Service well qualifies them to cope with any situation which may arise in this field. It has been proved also that the Service is sufficiently flexible to cater for any changing needs of the community within the scope of its work.

### STAFF.

The number of nursing staff now totals 121 and of these 55 have been appointed to the permanent staff and 66 hold temporary positions. Although extensions of the Service have increased by five, the total number of Sisters employed, the proportion of temporary to permanent staff is little altered and therefore the nursing staff position is still far from satisfactory.



Twenty new appointments were made to the permanent staff during the year, most of these being Sisters who had held temporary positions for some time. Since the appointments, two of the newly appointed Sisters resigned, one to marry and one to return to a hospital position, and three resumed temporary status, one owing to ill health and two to marry. Two Sisters-in-charge resigned, one to be married and one owing to ill-health. The latter had been on the staff twenty-four years. Seven Sisters were appointed to Sister-in-charge positions to fill existing vacancies.

In order to interest newly-graduated Sisters in the work and also to give them experience, a number of temporary positions are maintained in Homes and Centres in Brisbane so that each grade of students, as they complete their six months course, may, if they are keen, have an opportunity of a period of Child Welfare experience as graduates. This practice has proved of value in that some of the Sisters who remained were later willing to accept temporary positions in country Homes and Centres. Others remained for a few months and returned to hospital work.

It is noticeable that the majority of nurses now applying for Child Welfare training are in the younger age groups, owing to the early age at which girls are accepted as student nurses in general hospitals. Wishing to become fully qualified before deciding in which branch of nursing to apply for a position, these nurses complete general and obstetric training and follow on with Child Welfare with, as a rule, little or no hospital experience as graduate nurses. The result is that few of them are suitable for permanent positions on the Maternal and Child Welfare staff. Apart from a nurse's own wish to obtain hospital experience in general or obstetric nursing, there is no question that Sisters appointed to the permanent staff of this Service require to be experienced in at least the three branches of nursing in which the position requires them to be qualified. Sisters employed in the Homes need a satisfactory background of general and obstetric experience in addition to their training in order to deal adequately with emergency illnesses or accidents which may occur among mothers and babies and possibly staff, and in a State the size of Queensland, it is obvious that Sisters in country Centres are liable to be called upon to advise in cases of emergency when no doctor is available. On a number of occasions country staff have been called to obstetric cases, in one instance a Sister had to deliver a baby in an obstetric emergency with which the nurse in attendance was incompetent to deal.

In addition, the Child Welfare nurse in Queensland is the only equivalent to the Public Health nurse of other countries and for this reason she must be competent to teach the principles and practice of preventive medicine to the families with whom she comes into such close contact.

The purpose of this detail elucidation of the staff situation is to point out the necessity for the employment in this Service of highly qualified Sisters, and the parallel responsibility which must be accepted for attracting such Sisters to positions. The first step towards this achievement has already been taken by the substantial

salary increase gazetted recently and there is no doubt of the good effect this has created. However, the question of accommodation is an ever-present one and it must be realised that Sisters in senior positions in hospitals are invariably well housed, have their meals provided and served and all other domestic work done for them. Sisters in this Service, especially in the country, must travel considerable distances in all weathers and at all hours and their lack of any degree of comfortable home life in some places is a deterrent even to the missionary minded. The provision of comfortable quarters therefore is one which must be kept well in the forefront of any future planning.

The Superintendent does her best to ensure that the stay of any one Sister in places which have been reported as very uncomfortable to work is not unduly long and yet a constant change of staff is not conducive to retaining the confidence of country mothers who need the help and friendship of the Sisters to a much greater degree than those in the city.

It is noteworthy that where comfortable cottages for the Sisters have been arranged, as in Biloela and Mount Isa, no staffing difficulties arise although the climate and travelling in both places is not attractive.

Every effort has been made in transferring Sisters to place them in Centres where they will settle down happily and many domestic and personal difficulties have received understanding and sympathetic consideration, with as a rule much appreciation from the staff concerned. The very fine work which continues to be carried out in Homes and Centres all over the State is a reflection of this.

#### APPOINTMENT OF SISTER TUTOR.

Continuing its policy of improving the work in the Training Schools, the position of Sister-Tutor at St Paul's Terrace Home has now been filled by Miss Valerie E. Smith who holds the Sister-Tutor diploma of the University of London.

#### ENTERITIS.

During the year an outbreak of enteritis caused by *E. coli* 0.111 occurred at the Clayfield Home. On the 9th October, eleven clinical cases and one subclinical case of diarrhoea occurred, this being the first time that *E. coli* 0.111 had been found.

All members of the staff were examined and it was found that two trainees were affected and both had mild diarrhoea one week prior to the outbreak among the infants. Two of the eleven clinical cases became acutely ill, and were transferred to hospital where one subsequently died.

Of the other coli groups, in April, 1952, two resident mothers and one member of the trained staff were found to contain *E. coli* 0.55 in their faeces but no infection occurred among the infants.

Concerning the Salmonella groups, two cases occurred in each of the metropolitan Homes, two of group C in one Home and one of group B and one of C in the other and in no instance did the infants show any evidence of enteritis. One adult carrier of group E was found in December, 1951, and two adult carriers of group C were found in April, 1952, but no infection occurred among the infants.



Two adult carriers of *Shigella sonnei* were found, one in March and the other in April, and one case occurred in an infant in June, 1952, but in this particular case an older child of the same family recently had had an attack of diarrhoea.

From the above observations, it would seem that *E. coli* 0.111 is highly infectious and the adult carrier is a potent source in its spread.

The following table shows the result of bacteriological examinations carried out in the two metropolitan Homes in 1950-1951 and 1951-1952:—

TABLE LV.  
SHOWING BACTERIOLOGICAL EXAMINATIONS AT THE TWO METROPOLITAN HOMES 1950-51 AND 1951-52.

Organism.	Clayfield Home.		St. Paul's Terrace Home.	
	1950-1951.	1951-1952.	1950-1951.	1951-1952.
Salmonella .. ..	4 cases 1 group B 1 group D 2 group C	2 cases Both group C	3 cases All group B	2 cases 1 group B 1 group C
Shigella sonnei ..	Nil	1 case 2 adult carriers	Nil	Nil
E. coli 0.111 ..	No examinations made	12 cases 2 adult carriers	No examinations made	4 cases
E. coli 0.55 .. ..	No examinations made	No cases 3 adult carriers	No examinations made	Nil

PREMATURITY.

The following table has been compiled from the records of the Brisbane Women's Hospital for the year ending 31st December, 1951:—

TABLE LVI.  
SHOWING DETAILS OF BIRTHS AND DEATHS OF PREMATURE INFANTS, BRISBANE WOMEN'S HOSPITAL, 1951.

Brisbane Women's Hospital.								Live Births.	Premature Births.	Percentage of Live Births.	Deaths of Premature Infants.	Percentage Mortality of Premature Infants.
Public .. .. .	..	..	..	..	..	..	..	2,967	229	7.7	21	9.0
Intermediate ..	..	..	..	..	..	..	..	6,232	283	4.5	35	12.4
Total .. .. .	..	..	..	..	..	..	..	9,199	512	5.5	56	10.9

Forty-eight non-viable infants were born, of whom eight survived, the lowest weight being 1 lb. 13 oz. and the highest 2 lb. 10 oz. The infant of 1 lb. 13 oz was born on 18th October, 1951, and is now 10 lb. 14 oz. and is progressing steadily although she has always been a most difficult feeder.

TABLE LVII.  
CAUSES OF DEATHS OF PREMATURE (IMMATURE) INFANTS.

—	1951	1952
Immaturity unqualified .. .. .	155	153
Ill-defined diseases peculiar to early infancy, with immaturity .. .. .	39	16
Postnatal asphyxia and atelectasis, with immaturity .. .. .	29	26
Intracranial and spinal injury at birth, with immaturity .. .. .	16	17
Other birth injury, with immaturity .. ..	16	27
Neonatal disorders arising from maternal toxæmia, with immaturity .. ..	13	18
Pneumonia of newborn, with immaturity ..	6	8
Haemorrhagic disease of newborn, with immaturity .. .. .	3	3
Erythroblastosis, without mention of nervous affection but with immaturity .. ..	2	7
Nutritional maladjustment, with immaturity	2	1
Immaturity with mention of any other subsidiary condition .. .. .	2	5
Diarrhoea of newborn with immaturity ..	1	..
Umbilical sepsis with immaturity .. ..	..	1
Total .. .. .	284	282
Total under one year .. .. .	284	282
Total under one month .. .. .	281	277

BIRTH WEIGHT OF QUEENSLAND INFANTS.

During the year ended 31st December, 1951, 17,422 newly born infants attended the various Centres throughout the State. The average weight of these babies was 7 pounds 8 ounces.

For purposes of comparison the State was divided into two zones—Tropical and Sub-tropical—the dividing line being roughly the Tropic of Capricorn. These two divisions were further subdivided into coastal and inland, the dividing line being a line roughly two hundred miles inland and parallel to the coast. The metropolitan area was separated from the Sub-tropical coastal.

The following table shows the average birth weights:—

TABLE LVIII.  
SHOWING AVERAGE BIRTH WEIGHTS OF INFANTS BORN DURING 1951.

Division.	Number of Infants.	Average Birth Weight.
		lbs. ozs.
Metropolitan .. .. .	6,833	7 6
Tropical Coastal .. ..	3,742	7 8
Tropical Inland .. ..	615	7 9
Sub-tropical Coastal ..	3,499	7 10
Sub-tropical Inland ..	2,733	7 9
Total .. .. .	17,422	7 8



THE HANLON MEMORIAL CLINIC.

On Sunday, the 30th March, 1952, the Premier, the Honourable V. C. Gair, in the presence of a distinguished gathering, dedicated the new Centre at Paddington, Brisbane, to the memory of the late Premier, the Honourable E. M. Hanlon.

It is fitting that this new Centre should be established in the late Premier's electorate, within sight of his home, perpetuating as it does the memory of a great man who has done so much for Queenslanders in general, and the mothers and children in particular.

DEATHS.

Maternal.

The number of deaths of women due to diseases of pregnancy and childbirth was 35 in 1951 with a corresponding mortality rate of 1.18 per thousand live births. This is the lowest maternal mortality rate ever recorded in Queensland.

Of the 35 deaths occurring in 1951, 15 followed childbirth and 15 were due to diseases and accidents of pregnancy (excluding abortion).

The causes of the 15 deaths due to diseases and accidents of childbirth were as follows:—

Puerperal toxæmias and infection during childbirth and puerperium .. ..	6
Haemorrhage of childbirth and puerperium ..	5
Other accidents of childbirth including Caesarian section .. .. .	4

The causes of the 15 deaths due to diseases and accidents of pregnancy were as follows:—

Toxaemia of pregnancy .. .. .	11
Haemorrhage of pregnancy .. .. .	2
Other complications of pregnancy .. ..	2

Infantile.

Deaths of infants under one year numbered 761 compared with 719 in 1950, an increase of 42. The infantile mortality rate of 25.7 per thousand live births is higher than the rate for the previous year which was 24.8 and this rise was brought about mainly by an increase in the number of birth injuries in the neo-natal group, and a marked increase in the incidence of gastro-enteritis and colitis in the one month to one year group. Reference is made elsewhere concerning the incidence of enteritis caused by *E. coli* 0.111 which was responsible for a number of deaths.

The rate for the metropolitan area for 1951 was 26.8 compared with 22.7 in 1950. Birth injury and gastro-enteritis were responsible for this rise. The sub-tropical area showed a decrease of 25.3 in 1950 to 24.0 in 1951, whilst the tropical area showed a decrease from 27 in 1950 to 26.8 in 1951.

Five hundred and forty-one children under one month and 220 from one month to one year died during the year, the corresponding mortality rates being 18.2 and 7.4 per thousand live births.

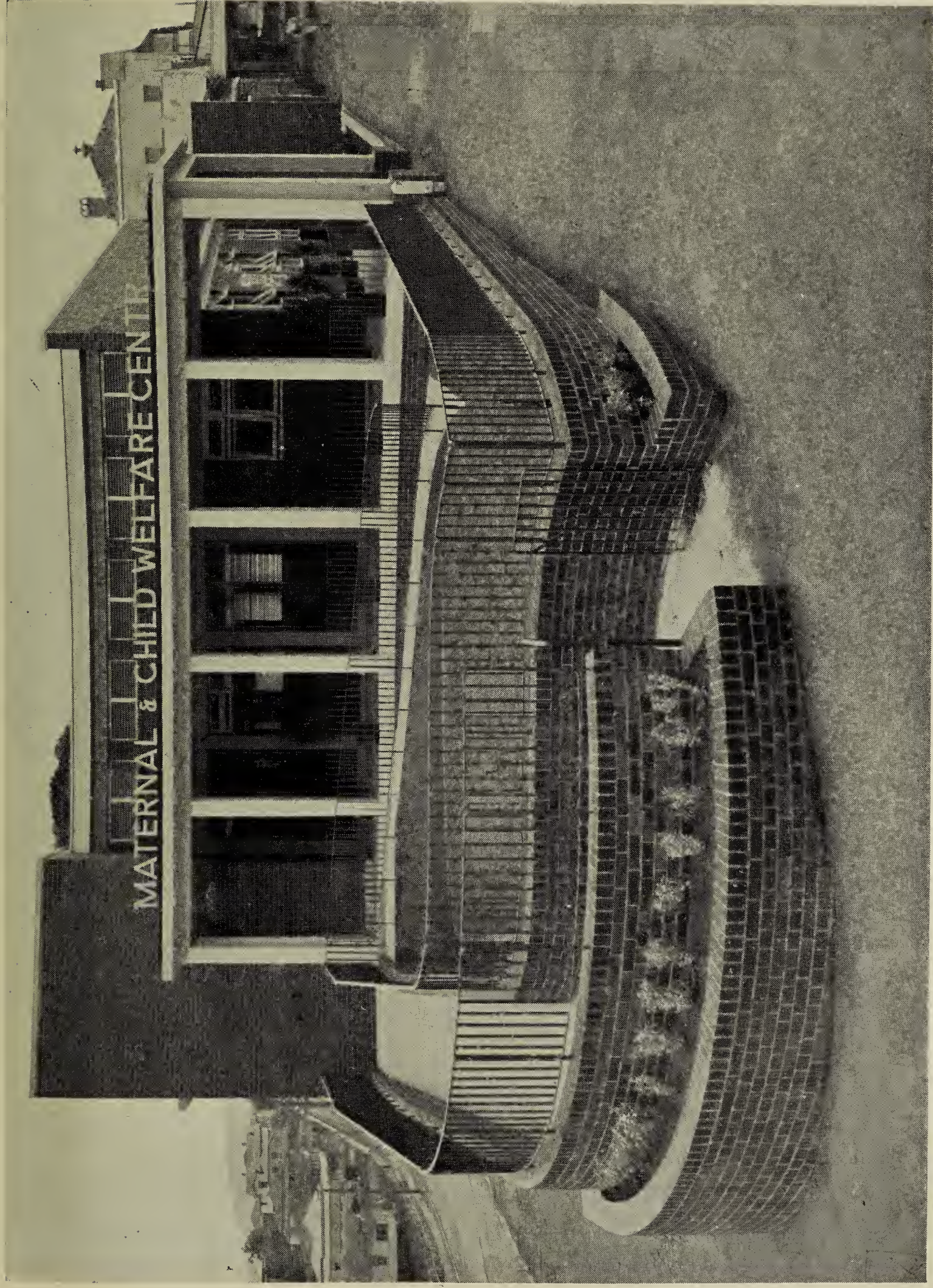
TABLE LIX.

CAUSES OF DEATHS IN INFANTS UNDER ONE YEAR, QUEENSLAND, 1951.

Cause.	1950.	1951.				Increase or Decrease.
		Metropolitan.	Sub-Tropical. (a)	Tropical.	Total.	
Immaturity (unqualified) .. .. .	155	58	62	33	153	—2
Congenital Malformations .. .. .	108	43	38	24	105	—3
Intracranial and spinal Injury at Birth ..	83	21	36	17	74	—9
Other Birth Injury .. .. .	32	18	18	19	55	+23
Postnatal Asphyxia and Atelectasis .. ..	65	19	23	17	59	—6
Pneumonia of Newborn .. .. .	22	14	11	8	33	+11
Haemolytic Disease of Newborn (Erythroblastosis) .. .. .	25	7	12	8	27	+2
Neonatal Disorders arising from Maternal Toxaemia .. .. .	14	7	8	8	23	+9
Haemorrhagic Disease of Newborn .. ..	11	3	11	..	14	+3
Diarrhoea of Newborn .. .. .	4	2	1	..	3	—1
Other Diseases Peculiar to Early Infancy ..	54	13	12	7	32	—22
Total Diseases of Early Infancy ..	573	205	232	141	578	+5
Bronchopneumonia, other and unspecified Pneumonia .. .. .	37	10	18	10	38	+1
Gastro-Enteritis and Colitis .. .. .	9	28	6	6	40	+31
Whooping Cough .. .. .	9	1	2	..	3	—6
Lobar Pneumonia .. .. .	7	1	1	..	2	—5
Diphtheria .. .. .	1	1	1	..	2	+1
All other Causes .. .. .	83	31	35	32	98	+15
Total Deaths under 1 year .. ..	719	277	295	189	761	+42

(a) Excluding Metropolitan.





The E. M. Hanlon Memorial Maternal and Child Welfare Centre, Paddington, Brisbane.









Waiting room of the E. M. Hanlon Memorial Clinic.





TABLE LX.

CAUSES OF DEATHS IN INFANTS UNDER ONE MONTH OF AGE—QUEENSLAND, 1951.

Cause.	1950.	1951.				Increase or Decrease.
		Metro-politan.	Sub-Tropical. (a)	Tropical.	Total.	
Immaturity (unqualified) .. .. .	155	58	62	33	153	-2
Intracranial and Spinal Injury at Birth ..	82	20	36	17	73	-9
Other Birth Injury .. .. .	32	18	18	19	55	+23
Congenital Malformations .. .. .	74	25	20	18	63	-11
Postnatal Asphyxia and Atelectasis .. ..	62	18	23	17	58	-4
Pneumonia of Newborn .. .. .	22	14	11	8	33	+11
Haemolytic Disease of Newborn (Erythroblastosis) .. .. .	24	7	12	8	27	+3
Neonatal Disorders arising from Maternal Toxaemia .. .. .	14	7	8	8	23	+9
Haemorrhagic Disease of Newborn .. ..	11	3	11	..	14	+3
Diarrhoea of Newborn .. .. .	4	2	1	..	3	-1
Other Diseases Peculiar to Early Infancy ..	50	10	7	5	22	-28
Total Pre-natal Causes .. .. .	530	182	209	133	524	-6
All Other Causes .. .. .	7	3	6	8	17	+10
Total Deaths under 4 weeks .. .. .	537	185	215	141	541	+4

(a) Excluding Metropolitan.

TABLE LXI.

CAUSES OF DEATHS IN INFANTS MORE THAN ONE MONTH, BUT LESS THAN TWELVE MONTHS OF AGE—QUEENSLAND, 1951.

Cause.	1950.	1951.				Increase or Decrease.
		Metro-politan.	Sub-Tropical. (a)	Tropical.	Total.	
Congenital Malformations .. .. .	34	18	18	6	42	+8
Postnatal Asphyxia and Atelectasis .. ..	3	1	..	..	1	-2
Haemolytic Disease of Newborn (Erythroblastosis) .. .. .	1	..	..	..	..	-1
Intracranial and Spinal Injury at Birth ..	1	1	..	..	1	..
Other Diseases Peculiar to Early Infancy ..	4	3	5	2	10	+6
Total Pre-natal Causes .. .. .	43	23	23	8	54	+11
Bronchopneumonia, other and unspecified Pneumonia .. .. .	37	10	18	10	38	+1
Gastro-enteritis and Colitis .. .. .	9	28	6	6	40	+31
Whooping Cough .. .. .	9	1	2	..	3	-6
Lobar Pneumonia .. .. .	7	1	1	..	2	-5
Diphtheria .. .. .	1	1	1	..	2	+1
All other Causes .. .. .	76	28	29	24	81	+5
Total Deaths 4 weeks and Under 1 Year	182	92	80	48	220	+38

(a) Excluding Metropolitan.

Deaths of Children Aged One and Under Five Years.

(a) Deaths of children aged one year and under two years during the year numbered 111, representing a death rate of 3.9 per thousand children in that age group.

The chief causes of deaths were—

Accidents .. .. .	23
Pneumonia—	
Bronchopneumonia 11 .. ..	} 21
Lobar Pneumonia 5 .. ..	
Other Unspecified 5 .. ..	
Gastro-enteritis and Colitis .. ..	13
Bronchitis .. .. .	6
Diphtheria .. .. .	5

Of the 23 deaths due to accidents, seven were caused by drowning, three by motor accidents and four by accidental poisoning.

(b) Deaths of children between two years and under five years during the year numbered 111, representing a death rate of 1.3 per thousand children in that age group.

The chief causes of deaths were—

Accidents .. .. .	29
Malignant Neoplasms .. .. .	8
Pneumonia (all kinds) .. .. .	8
Poliomyelitis .. .. .	6
Gastro-enteritis and Colitis .. .. .	4

Of the 29 deaths due to accidents, six were caused by drowning and ten by motor accidents.



Accidental Deaths of Children between  
One and Fourteen Years.

Despite various methods of education with regard to the prevention of accidents, the toll

of accidental deaths between one year and fourteen years shows no sign of diminishing. The following table shows the death rate from accidents for the six years 1946 to 1951—

TABLE LXII.  
ACCIDENTAL DEATHS OF CHILDREN (AGED 1-14 YEARS) IN QUEENSLAND.

—	1946.		1947.		1948.		1949.		1950.		1951.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Road Accidents ..	14	8	10	9	13	12	14	8	7	9	11	16	131
Firearms .. ..	3	..	6	..	2	1	2	..	..	..	7	..	21
Drowning .. ..	15	2	15	6	9	1	21	3	19	7	16	7	121
Falls .. .. .	7	1	10	4	8	3	6	2	4	1	2	..	48
Other Accidents and Violence.. ..	26	14	19	12	11	6	27	12	20	11	27	19	204
	65	25	60	31	43	23	70	25	50	28	63	42	525
Totals .. ..	90		91		66		95		78		105		525

THE YEAR'S WORK.

The number of Centres and Sub-centres throughout the State now totals 209, 47 being in the metropolitan area and 162 in the country.

The total number of attendances was 367,748.

*Mothercraft Homes.*—The conversion of the properties acquired at Rockhampton and Ipswich has been completed and the Ipswich Home admitted the first two mothers and infants on the 28th and 30th June, 1952. The Ipswich Home will be officially opened by the Minister for Health and Home Affairs on August 3rd, and will be dedicated to the memory of Dr. A. Jeffries Turner who was Director of Maternal and Child Welfare from 1925 to 1937.

*Centres Established.*—

- 1. The Hanlon Memorial Centre at Paddington on 1st December, 1951.
- 2. Sandgate on 7th January, 1952.

Approval was given for the establishment of a Resident Centre at Ayr and as soon as it is possible to appoint a Sister for that area this Resident Centre will be opened.

*New Sub-centres Established.*—

- 1. Muttaborra on 30th August, 1951, which is visited by plane from Longreach.
- 2. Archerfield on 5th November, 1951, visited by the Sister-in-Charge of the South Brisbane Sub-centres.
- 3. Manly on 9th November, 1951, visited from Wynnum.
- 4. Morven on 3rd April, 1952, visited from Charleville.

*Sub-centres Approved.*—Approval has been given for the establishment of Sub-centres at Goodna, Clare, Stuart, Rising Sun, Garbutt, Wavell Heights and Coopers Plains.

Requests have been received from Aeroglen, Beerwah, Cannon Hill, Chelmer, Meandarra, Northgate, Park Avenue, Petrie, Rosedale, St. George, Stafford and Taroom.

Shortage of staff and in some cases lack of accommodation has precluded the opening of sub-centres in some areas.

TOURS OF INSPECTION.

A tour of inspection was made by the Deputy Superintendent during September, 1951, travelling 1,784 miles by rail, visiting Maryborough, Gayndah, Rockhampton, Blair Athol and Emerald. These visits are much appreciated by the Sister in Charge as a personal discussion allows more ground to be covered and gives both persons a better understanding of problems and conditions and have them rectified where possible.

At Gayndah, a thorough investigation was made into the possibility of securing more suitable accommodation for the Maternal and Child Welfare Centre, which at present is conducted in a small back room of the Country Women's Association's building and is most inadequate for the work. Unfortunately no other accommodation could be found.

At Rockhampton, the suburb of Park Avenue was visited, as this suburb had made a request to have a Sub-centre established there, and it was decided that when more staff was available a Sub-centre in this area would bring this Service to a number of mothers. The Sub-centre at North Rockhampton had relieved the congestion at the central Centre a great deal. A visit was made to the Mothercraft Home which was still under construction.

At Blair Athol the accommodation was found to be most unsuitable and the President of the Country Women's Association was interviewed with the view to future accommodation for the Blair Athol Centre in the Country Women's Association's building. The Centre was moved to this accommodation during April, 1952.

On the 7th September, 1951, a visit was paid to Dalby to inspect a building in New Street, Dalby, for its suitability in accommodating the Dalby Maternal and Child Welfare Centre. This was found to be suitable and the Centre was transferred to New Street, Dalby, from the back of Winchester's Barber's Shop, Dalby, on 29th September, 1951.





The Jeffers Turner Maternal and Child Welfare Home, Ipswich.









Babies' Sun Room.—The Jefferis Turner Maternal and Child Welfare Home, Ipswich.



Frontage.—The Jefferis Turner Maternal and Child Welfare Home, Ipswich.









The Maternal and Child Welfare Home, Rockhampton.—Front View.



The Maternal and Child Welfare Home, Rockhampton.—Side View.







## ST. PAUL'S TERRACE HOME, BRISBANE.

The Home has been consistently busy and in spite of staff shortage has managed to maintain the full number of breast-fed infants and mothers. An increased number of mothers and babies were admitted to the Home during the year—119 mothers and 213 babies being admitted.

Many mothers have benefited as a result of time spent in the Home. Probably one of the most valuable aspects of residence is the experience gained by the mother in handling and feeding her baby.

The practice of sending mothers out of hospital at the end of a week with breast milk supply not fully established and babies not feeding well, has probably contributed to many early weanings. Also, the number of small and frail babies now surviving, and often leaving hospital, weighing five pounds, present difficulties. Rarely can these infants become fully breast-fed without considerable help and many of them are eventually artificially fed.

There have been fifteen infants with hare-lips and cleft palates admitted during the year—most remaining until transferred to hospital for repair of lip. However, in several cases, where the baby presented little feeding difficulty and was nearing the weight required, prior to operation, the mother has been instructed and allowed to take the baby home earlier.

Fewer premature babies now require residence, most going to the premature ward at the Women's Hospital, but small, frail and some premature babies have provided the necessary material for trainees.

The most satisfactory improvement carried out has been in respect of the mother's dormitory. The removal of bamboo blinds and replacement with casement windows and boarding up with fibro cement has made a great difference to the comfort of resident mothers. It has given added privacy, warmth and a feeling of security to mother's sleeping quarters.

For some time it has been felt that mothers often had too little leisure, and that the preparation of and cooking meals has often fallen to the lot of one mother—to overcome this a midday meal is now being prepared in the general kitchen.

## ST. PAUL'S TERRACE TRAINING SCHOOL.

Thirty-two candidates presented themselves for examination in December, of whom thirty passed. Twenty trainees sat for examination in June and all passed.

The smaller group of twenty trainees made the staffing of the Home difficult and it was only possible to keep the Home open by employing trained staff to do the work normally carried out by trainees.

Miss Valerie Smith was appointed Sister Tutor and has brought much interest to the work. She has instituted the practice of visiting the Department of Agriculture and Stock as well as various firms processing or packing food.

## CLAYFIELD HOME, BRISBANE.

During the year many additions and renovations to the Home have been completed. A new room to house two mothers, now makes it possible to admit seven mothers. Portion of the side

verandah which was enclosed and previously used as a test feed room has been converted into a sterilising room. The test feed room is now in the room previously used for a diet kitchen which is now located in the mothers' old bathroom.

A new drying room has been added to the laundry and a separate portion added for the boiling of soiled napkins.

The new wing for the matron's quarters has been completed.

The domestic change room has been altered and a shower installed.

The front verandah has been enclosed with louvres, thus giving a permanent nursery for breast-fed babies.

All possible precautions are taken to prevent infection in the Home. These include rectal swab examinations of all infants admitted, boiling of napkins and clothing before washing, detailing of special staff to change babies, and rigid attention to personal hygiene. Despite all these precautions, an outbreak of enteritis caused by *E. coli* 0.111 occurred in November, details of which are mentioned elsewhere in this report.

Many small babies are now being discharged from hospital and are admitted to the Home, either for the establishment of breast feeding or more often as artificially fed babies. The demand for accommodation often exceeds that which is available. 197 infants and 83 mothers were admitted during the year.

## CLAYFIELD TRAINING SCHOOL, BRISBANE.

This Home is attracting more girls each year for training as Child Welfare Assistants. At present there are two grades in training, one of twenty-one, the other of twenty-two.

In December, fifteen girls were successful in their examination. In May, twelve girls satisfied the examiners.

Since the inauguration of this Home in 1943, over one hundred trainees have done further nursing training.

MATERNAL AND CHILD WELFARE HOME,  
TOOWOOMBA.

During the year 37 mothers and 84 babies were admitted to the Home. Four children between the ages of one and two years were also admitted to the Home.

The work at the Home continues to grow although the numbers have not increased greatly. Many difficult cases, often extremely underweight, have been admitted.

Cases came from country districts such as Charleville, St. George, Inglewood, Warwick, Miles, Roma, Gayndah and other surrounding districts. One mother, a deaf mute with a new baby, was admitted for feeding adjustment before returning to Richmond, North Queensland.

Difficult cases included a number of vomiting babes. Two of these were transferred to hospital for operation and returned later for feeding. Three cases of pyloric spasm responded to treatment. There were also cases of extreme malnutrition and one case of "Pink Disease."



Many others were premature or frail babes received mainly on transfer from the Mothers Hospital.

During the year four sets of twins and one set of triplets were admitted.

#### TOOWOOMBA HOME TRAINING SCHOOL.

During the year examinations for trainees were held in December and June. Eight trainees graduated in December and five in June.

Applications are increasing from prospective trainees who regard the training as a pre-nursing course mainly.

Lectures were given by Drs. G. V. Hickey, senior and junior, and Miss Clark. Matron Woodgate assisted in the examinations.

Miss M. P. Broomhead is now Tutor Sister, following the transfer of Miss G. Caterson.

#### MATERNAL AND CHILD WELFARE HOME, SANDGATE.

At the beginning of the year 38 children from 15 families remained in the Home. During the year 754 children were admitted from 265 families. Sixteen of these families returned once and two twice during the year.

Children admitted were (a) between the age of one and five years—219 boys and 145 girls, (b) between the age of five and ten years—186 boys and 146 girls, (c) over the age of ten years—26 boys and 32 girls, total 433 boys and 321 girls. Children spent a total of 13,722 days in residence, which gives an average of 37.43 children in the Home daily and 17 days residence for each child.

Twenty-five children were sent to hospital during the year, 15 returned to the Home, the rest were discharged from hospital to their own homes. In the early months of the year, chickenpox, mumps and hepatitis accounted for most of the illness. During the last four months, except for the usual colds, the children have had good health, none having occasion to be sent to hospital.

At Christmas a party was given for the children with a Christmas tree loaded with toys, each child receiving toys, sweets and ice cream, supplied by "The Courier Mail Toy Fund" and the Department.

At Easter time the children attended the R.A.C.Q. picnic and enjoyed the novelties and gaiety provided. Picnics have also been arranged twice during the year by the Sandgate Baptist Sunday School.

Moving pictures each month were a regular feature for the first six months of the year, but the last six months Mr. Rouse, who owns and operates the machine, has been ill and unable to work.

The Queensland Temperance Union last month gave the children a very good picture afternoon, providing their own pictures. They may come to some arrangements with Mr. Rouse as to the showing of pictures each month.

Thanks are due to the Sandgate Baptist Sunday School who conduct Sunday School for the children each Sunday afternoon, also The

Society of St. Vincent De Paul whose members call each Sunday morning and take the children to Mass and bring them safely back to the Home.

In the Babies Home the year commenced with six babies in residence. During the year 86 babies (58 males and 28 females) were admitted from 76 families. Four of these families returned during the year. The infants spent 2,977 days in residence, giving a daily average of eight and 34.6 days for each child.

Six children were sent to hospital, four of whom returned to the Home, the other two being discharged to their own homes. One babe, which was transferred to St. Paul's Terrace Home, later returned to the Home.

Early in August the Home was closed for three weeks because of a measles and chickenpox outbreak.

Four babies were taken to hospital at intervals for Mantoux tests, and B.C.G. injections.

In the latter part of the year, the main verandah was closed in with louvres and now toddlers are able to be accommodated in the Home.

#### RAIL CAR.

During the year a Rock Gas System with gas stove, sink, heater, steriliser and hot shower, was installed adding greatly to the comfort of the Sisters. The Sister-in-charge has commenced mothercraft classes at Richmond, Winton, Hughenden and Julia Creek and the mothers are most appreciative of this extra service.

Apart from the regular itinerary of Winton, Hughenden, Julia Creek, Maxwelton and Richmond, many sidings were visited including Corfield, Olio, Whitewood, Nelia, Marathon, Tarvano, Nonda, Stamford, Quarrells and Oondaroo.

#### ANTE-NATAL CLINICS.

The number of patients attending for ante-natal care has increased at all Clinics. Stress has been laid on the importance of a post-natal visit by every patient and the results have been most satisfactory. The majority of patients report for post-natal examination six weeks after confinement and earlier or more frequently if necessary.

Patients are followed up in hospital by the medical officer's weekly visit to the Women's Hospital, where information of treatment and the details of the confinement are obtained.

It is desired that medical staff at the Women's Hospital be furnished with greater details of the patients' ante-natal history than at present. A new card system has been planned—cards are to be completed at the Clinic and forwarded to the hospital superintendent two weeks before the expected date of confinement.

Many patients have found it impossible to include all the desired food substances in their diets. The most outstanding deficiencies were milk, eggs and meat. It has been possible, however, to rectify these deficiencies, either by substituting other foods or assisting the patient to obtain restricted supplies.



Conditions complicating pregnancy were as follows:—

1. Ante-natal.					
Condition.					Number of cases.
Albuminuria	..	..	..	..	1
Anaemia	..	..	..	..	15
(14 of these were a mild degree only).					
Contact with German Measles	..	..	..	..	2
(Both received serum).					
Glycosuria	..	..	..	..	4
Hernia (Ventral)	..	..	..	..	1
Hydramnios..	..	..	..	..	2
Hypertension	..	..	..	..	3
(2 were admitted to hospital).					
Miscarriage—					
Threatened	..	..	..	..	3
Inevitable	..	..	..	..	5
Neurasthenia	..	..	..	..	3
Rhesus negative	..	..	..	..	15
(1 showed increased antibody titre)					
Stillbirths	..	..	..	..	1
Toxaemia	..	..	..	..	6
Twins	..	..	..	..	2

2. Post-natal.					
Condition.					Number of cases.
Cervicitis	..	..	..	..	1
Cystocoele	..	..	..	..	2
Cystocoele and rectocoele	..	..	..	..	3
Placental Polyp	..	..	..	..	1
Rectocoele	..	..	..	..	2
Ventral Hernia	..	..	..	..	2

Attendances for the year ending 30th June, 1952, were as follows:—

Fortitude Valley	..	..	..	..	519
Woolloongabba	..	..	..	..	778
Caboolture	..	..	..	..	188
Herschell Street	..	..	..	..	19
Nundah	..	..	..	..	7
West End	..	..	..	..	24
Talks to Mothers	..	..	..	..	43
Total attendances					1,578

There has been a noticeable increase in the attendance of expectant mothers at the Woollongabba, Fortitude Valley and Caboolture Centres.

CORRESPONDENCE SERVICE FOR EXPECTANT MOTHERS.

The number of circulars forwarded to country expectant mothers has decreased as many requests for copies of “The Expectant Mother’s Book” and “Ante-natal and Post-natal Exercises” are received from Hospitals and Doctors in private practice. These books are given to patients either by the Doctor or the Hospital and further contact for the remaining months is lost.

The number of letters received for advice and later after the birth of the babe has increased and great interest shown in the Correspondence Service given.

Circular letters forwarded to expectant mothers	..	..	..	..	4,604
Response to circular letters	..	..	..	..	1,272
Circular letters forwarded to expectant mothers (other than above) re “Expectant Mother” book	..	..	..	..	2,498
Serial letters to expectant mothers	..	..	..	..	9,070
Special letters of advice sent on request	..	..	..	..	191
Copies of “The Expectant Mother” sent on request	..	..	..	..	2,003
Copies of baby patterns sent on request	..	..	..	..	146
Copies of other patterns sent on request	..	..	..	..	44
Copies of special exercises sent on request	..	..	..	..	1,361
Copies of special exercises sent on request to Doctors and Hospitals	..	..	..	..	1,428

DIRECTOR’S CONSULTANT CENTRE.

During the year there was a slight increase in attendance of infants and toddlers whose feeding and management had proved difficult and were referred to the Director by Sisters in Charge of metropolitan and country Centres and by private medical practitioners.

This year shows an increased number of children for admission to Sandgate Maternal and Child Welfare Home and fewer children for admission to Red Cross Home, Margate, were examined and throat swabs taken.

Attendances for the year ending 30th June, 1952, were as follows:—

Number of children examined for admission to Sandgate Home	..	1,300
Number of children examined for admission to Margate Red Cross Home	..	246
Attendances at Director’s Consultant Centre for advice	..	1,821
Total number of children examined or advised at Centre	..	3,255

PRE-SCHOOL HEALTH CENTRES.

At the fifteen centres and seven kindergartens, children from the age of one to five years were examined.

The total number of examinations made during the year was 4,001 of which 1,830 were first examinations and 2,171 were subsequent examinations. The total examinations during the previous year numbered 3,857.

There is a slight increase in the number of first and subsequent examinations over the previous year.

The following table shows the main abnormalities found at half-yearly examinations:—

TABLE LXIII.

Enlarged Tonsils	..	..	..	..	779
Knock Knees	..	..	..	..	614
Flat Feet	..	..	..	..	252
Anorexia	..	..	..	..	190
Anaemia	..	..	..	..	166
Bow Legs	..	..	..	..	121
Carious Teeth	..	..	..	..	84
Umbilical Hernia	..	..	..	..	66
Intoeing	..	..	..	..	58
Stained Teeth	..	..	..	..	52
Tonsilitis	..	..	..	..	51
Pronated Feet	..	..	..	..	49
Heart Murmurs	..	..	..	..	44
Rashes	..	..	..	..	30
Nocturnal Enuresis	..	..	..	..	27
Threadworms	..	..	..	..	26
Chalky Teeth	..	..	..	..	23
Allergy	..	..	..	..	15
Impetigo	..	..	..	..	14
Diarrhoea	..	..	..	..	14
Adenoiditis	..	..	..	..	14
Bronchitis	..	..	..	..	12
Eczema	..	..	..	..	11
Asthma	..	..	..	..	8
Dirt Eating	..	..	..	..	7
Hives	..	..	..	..	7
Mental Retardation	..	..	..	..	6
Hammer Toes	..	..	..	..	4
Gingivitis	..	..	..	..	4
Urticaria	..	..	..	..	4
Scabies	..	..	..	..	4
Squint	..	..	..	..	4
Conjunctivitis	..	..	..	..	4
Ringworm	..	..	..	..	3
Pink Disease	..	..	..	..	3
Inguinal Hernia	..	..	..	..	3
Talipes	..	..	..	..	2
Vincent’s Angina	..	..	..	..	2
Pyelitis	..	..	..	..	2
Undescended Testes	..	..	..	..	2
Stammering	..	..	..	..	2
Mongolism	..	..	..	..	1
Torticollis	..	..	..	..	1
Hydrocephalus	..	..	..	..	1
Hydrocoele	..	..	..	..	1
Visual Defect	..	..	..	..	1



Two hundred and ninety-three blood counts, 134 specimens of urine, 25 cellophane swabs and 14 specimens of fæces for fat analysis were examined at the Laboratory of Micro-Biology and Pathology.

Sixty-eight rectal swabs were examined at the Medical Research Institute.

Nine children were referred to their own doctors for treatment, 14 were referred to hospital, 2 were referred to the Radium Clinic, 2 were referred to the Acoustic Laboratory, and 23 referred to X-ray Department.

COUNTRY CENTRES.

The total number of examinations at Country Centres are as follows:—

—	New patients.	Subsequent visits.	Total.
Cairns .. ..	323	201	524
Rockhampton ..	70	45	115
Toowoomba .. ..	35	49	84
Townsville .. ..	213	71	284
	641	366	1,007

The following table shows the main abnormalities found at half-yearly examinations:—

TABLE LXIV.

Knock Knees .. ..	26
Enlarged Tonsils .. ..	21
Flat Feet .. ..	14
Anaemia .. ..	8
Bow Legs .. ..	8
Intoeing .. ..	6
Carious Teeth .. ..	6
Club Foot .. ..	2
Congenital Heart .. ..	2
Mouth Breather .. ..	2
Hare Lip and Cleft Palate .. ..	1
Stammering .. ..	1
Squint .. ..	1
Pink Disease .. ..	1
Ringworm .. ..	1
Scabies .. ..	1
Early Rickets .. ..	1
Microcephalus .. ..	1
Mongol .. ..	1
Backward Child .. ..	1
Adenoids .. ..	1

During the year toddlers' scales and cupboards were delivered to Ashgrove, Bulimba, Kedron, Mitchelton, Stone's Corner and Graceville Clinics; scales only to Rosalie and cupboard only to Hamilton Clinic. Electric heaters were delivered to Graceville and Stone's Corner.

Owing to the growing demand, it was difficult to arrange examinations of toddlers at Ipswich at six-monthly intervals, and it has been found necessary to increase the visits to that centre from two to three per month.

Children attending kindergartens of "Creche and Kindergarten Association" and State Kindergartens, were medically examined twice during the year.

Owing to poor attendance at Hamilton Clinic, permission has been given to close the toddlers' Clinic there and open one at Sandgate Centre instead.

Toddlers' Clinics were closed for a period of one month between 14th December, 1951, and 14th January, 1952.

CORRESPONDENCE SECTION.

Birth notifications received from Centres show a decrease on last year's numbers, which accounts for fewer circulars posted.

Letters of advice regarding feeding and management are slightly less, but still have those from New Guinea and various isolated inland and mission stations, seeking advice.

Birthday Cards are forwarded to babies of one year and are much appreciated.

The six-monthly greeting cards are still sent regularly each month to mothers advising them to have their babies immunised against diphtheria. Many mothers have written and mentioned that they have taken this advice.

Correspondence mothers and babies from the country, pay visits when in Brisbane.

TABLE LXV.

Number of birth notifications received ..	2,846
Number of circular letters posted—	
(1) Within reach of Centre .. ..	1,083
(2) Not within reach of Centre .. ..	1,763
Number of follow-up circular letters posted	2,029
Visits to Centres in response to Circular letter No. 1 .. ..	495
Letters to Correspondence Section in response to Circular letter No. 2 ..	469
Letters of advice <i>re</i> feeding and management sent on request .. ..	1,382
Number of "Care of Mother and Child" books sent on request .. ..	631
Number of Birthday Cards posted ..	274
Number of 6 month Greeting Cards sent advising diphtheria immunisation ..	2,813

SOCIAL WELFARE SERVICE.

With the growth of the city extending into outlying suburbs, there are many new homes in distant and often scattered areas, and many small babes in these homes, which necessitates further travelling by the cars for the care of these infants. Being new districts, many of the streets are not yet named, and there are no numbers to the homes, which often causes delay in the finding of the place required.

Due to early discharge of mothers and babes from hospitals, the call upon the Social Welfare Service has become greater. Many mothers are not strong enough to go to the Clinic, and the number of premature babes just on the five pound or a little over the five pound mark, being taken home from hospital, seems to be on the increase.

The incidence of small premature, and frail babes who are artificially fed, seems to be very large, and one wonders what is the cause of this. Many mothers do not seem to have much idea of breast expression, and say they never could express much milk while in hospital, but when shown how to express, soon manage quite well. This could be one reason for the mother's failure to establish a supply for a babe too frail to go to the breast.

Temporary housing is not very satisfactory. There are no safe playing areas for small children. Many of the huts are cold and draughty, and not suitable for the housing of tiny babies, though some mothers have attempted to make their huts homely with floor coverings and curtains, but these do not help to warm the huts for tiny infants.

Medical students have been regular in attendance and many of the students have proved interested in the work and followed up the cases.



Child welfare trainees have all been interested, and many of them very helpful and kind to the mothers and babes. Many have said they did not realise the difficulties which could be met with in the homes, prior to doing this part of their training.

Comparison of figures—July, 1950, to June, 1951, total visits 1,877. July, 1951, to June, 1952, total visits 4,191.

TABLE LXVI.

Number of newborns visited in public hospitals .. .. .	9,988
Number of newborns visited in private hospitals .. .. .	464
Number of newborns visited at home ..	276
Number of cases visited for test feeds and advice .. .. .	4,191
Number of test feeds—cases .. ..	127
Number of test feeds—feeds .. ..	410

#### LECTURE DEMONSTRATIONS TO SCHOOL GIRLS.

Mothercraft teaching for the last school year 1951, was the same in the metropolitan area as in previous years with the exception of Ithaca Creek where classes were held for the first time. The School is being visited three days a week.

Classes were held as usual at Ipswich Technical College.

The Sister at Mt. Morgan Centre had a mothercraft class at the Mount Morgan Intermediate School. The girls were very interested and did good work. The principal was also interested and co-operative and had the mothercraft certificates presented to the successful candidates at the School speech night. The Sister hopes to extend the teaching to other Schools.

The Sister on the Rail Car has commenced classes at Richmond, Winton, Hughenden and Julia Creek.

The usual functions were held in the various Schools at the end of the year when the prizes and certificates were presented to the successful candidates.

The first half of the school year 1952 has not been as satisfactory as other years. The large Domestic Science Schools, Woollowin and West End, have not had their usual mothercraft lessons owing to the curtailment of the domestic science time to two and a-half hours instead of one day a week, thus it was not possible to include mothercraft lessons in domestic science time.

Milton School, which is usually visited later in the year for five days a week, will also be affected. It is hoped that it will be possible to make arrangements for the mothercraft lessons during ordinary school hours. This arrangement will only include pupils from the larger Schools as it will not be possible to visit a great number of Schools in the outer suburbs.

The lessons have become so much a part of the school year that a number of the girls have started collecting material in anticipation of the usual lessons.

#### LECTURES AND DEMONSTRATIONS FOR STUDENTS OF THE KINDERGARTEN TRAINING COLLEGE.

At the request of the Principal of the Kindergarten Training College, this Service again co-operated in the teaching of students from the College.

Lectures on Child Health and Child Development were given by Dr. T. H. R. Mathewson, and the matron of St. Paul's Terrace Home gave a course of lectures covering feeding and feeding management of the infant and child from birth to school age, with special reference to the causes of feeding problems likely to be met in children attending kindergartens.

The reciprocal arrangement by which both trained nurse students and child welfare assistants from the Homes in the metropolitan area are enabled to attend at kindergartens and the Lady Gowrie Child Centre and in the case of child welfare assistants to receive special lectures on the management of the pre-school child, play materials, &c., from a teacher of the Kindergarten Training College continues to be a source of benefit to both groups.

#### MEDICAL STUDENTS.

Four lectures were given to fourth year medical students on the Development of the Normal Child, one on the aims and activities of the Maternal and Child Welfare Service including provision for care of dependent or State children and one lecture on Statistics relating to Maternal and Child Mortality from birth to five years. Visits were made to Maternal and Child Welfare Centres.

Fifth year medical students were given four lectures on the care, feeding and management of infants during early life. Four demonstrations were given on the normal baby and foods used in infant feeding, and two demonstrations on babies and toddlers attending Maternal and Child Welfare Centres. Students visited St. Paul's Terrace Mothercraft Home.

Sixth year medical students attend Maternal and Child Welfare Centres, each student attending one day each week for five consecutive weeks. Students accompany the Social Service Sisters on visits to homes of mothers with new-born babies after discharge from hospital.

#### NEWSPAPER ARTICLES.

During the year a copy of an article on some aspect of Maternal and Child Welfare Work has been sent each month for publication to sixty-one newspapers in the State, including the *Queensland Agricultural Journal* and the *Queensland Dairyfarmer*. The titles of the articles were:—"Creatures of Habit," "The Sleeping Habit," "What is the Normal Posture," "Some Suggestions to Prevent Disease in Childhood," "Milk Shortage," "Holiday Health," "The Nervous Baby," "The Milk Shortage Should Not Worry Mothers of Young Babies," "The Child That Won't Eat," "Some Skin Conditions Common in Childhood," "Weight in Childhood," "Unhealthy Tonsils in Childhood."

#### PUBLICATIONS OF THE SERVICE.

The booklet "Care of Mother and Child" has been re-written and is now in the final stages of production. The booklet "The Expectant Mother" will be revised during the coming year and if necessary will be re-written.

Requests are still being received for all our booklets, not only from hospitals but also from many medical practitioners.

#### BABY CLINIC SOCIAL CLUB.

Quarterly meetings were held during the year, and were well attended.



In March, Misses Nixon and Ellis gave a talk on their observations of the Post-graduate Course for Matrons arranged by the College of Nursing, Australia, in Melbourne.

In April, Mr. Schubert, of the Department of Agriculture and Stock gave a lecture on "The Relationship of Bacteriology to Milk."

On 25th June, Dr. Clarke Ryan delivered a very interesting lecture on "Some Observations and Suggestions for the Treatment of Heat Prostration in the Very Young"

Miss Bardsley was the guest of honour at a dinner given to mark the occasion of her appointment as President of the Australian Nursing Federation and College of Nursing, Australia. Miss Bardsley is the first Queenslander to hold these appointments.

Food parcels and a sum of money were sent to England to the sponsored child Marion Saunders.

OBITUARY.

It is with regret that the Service records the death in July, 1951, of Miss Ellen Barron who established the first Training School for Child Welfare Nurses in Queensland.

Miss Barron received her general training at the Brisbane Hospital and held staff positions at that institution and the Maryborough Hospital prior to taking her obstetric training at Rockhampton. After holding the positions of matron at the Lady Musgrave Hospital, Maryborough, and Chillagoe Hospital, Miss Barron left for England where she obtained the certificate of the Incorporated Society of Trained Masseurs, London, and later a Massage Teachers Certificate.

On the outbreak of World War I, Miss Barron returned to Australia and enlisted in the Australian Army Nursing Service and was sent immediately to Egypt, following which she nursed the sick and wounded from the Gallipoli landing on the Island of Lemnos and later served in France until her demobilisation in 1918. On her return to Queensland, Miss Barron was appointed as nurse on the staff of one of the four Child Welfare Centres (then known as Baby Clinics) which had been opened in Brisbane that year.

In 1922 the Government purchased a site in Alfred Street, Fortitude Valley, for the establishment of a Central Baby Clinic and provision was then made to include in its activities the special post-graduate training of nurses in Child Welfare work. In connection with this scheme, the Home Secretary, on the recommendation of Miss Chatfield, Supervisor of Baby Clinics, selected Miss Barron, then Senior nurse at the Woolloongabba Clinic, to take a course of training at the Karitane Harris Hospital, Dunedin, New Zealand, under Sir Truby King. Miss Barron left for New Zealand in December, 1922, and returned in May, 1923, after a six months period of training and study. In October, 1923, when the Service consisted only of four Centres (Baby Clinics) in the metropolitan area, Miss Barron was appointed Superintendent of the newly opened Fortitude Valley Centre and in 1924 established a Training Course for the eight sisters already employed in the Service.

With the extension of the Service into the larger country towns, Miss Barron's position was re-classified and she was appointed Superin-

tendent of Nurses and Superintendent of the Training School in 1928. She retired in 1939 owing to ill-health.

To Miss Barron this Department owes a great debt of gratitude. She was a first class teacher and established the Training School for Nurses on the sound foundation which has made it possible to build the school to its present high standard of achievement. Miss Barron did not spare herself and set a very fine example of service to the sisters who came under her supervision. Her influence will long be felt by those who were privileged to work with her.

ACKNOWLEDGMENTS.

Sincere thanks are due to other Government Departments, the Queensland Country Women's Association, the Queensland Health Education Council, the Government Statistician, the staffs of the Brisbane Women's, Brisbane Children's and Mater Children's Hospitals, also the Principal of the Kindergarten Training College, the Director and staff of the Lady Gowrie Centre and the proprietors of newspapers in which monthly articles are published.

The same loyalty and devotion to duty was shown by the staff during the year as in every other year and grateful acknowledgment is made of that fact.

TABLE LXVII.  
VISITS TO NEWBORNS, SUBSEQUENT AND TOTAL VISITS

Year.	Visits to Newborns.	Subsequent and Other Visits.	Total Visits.
1949-1950 .. ..	23,658	2,705	26,363
1950-1951 .. ..	24,191	2,667	26,858
1951-1952 .. ..	25,801	1,593	27,394

TABLE LXVIII.  
ATTENDANCES AT CENTRES.  
Number of New Cases seen at the Centres.

	1949-50.	1950-51.	1951-52.
Infants—			
Under one year ..	17,719	17,567	18,076
One to two years ..	5,257	5,087	4,935
Over two years ..	2,600	2,146	2,244
Total ..	25,576	24,800	25,255
Expectant mothers ..	939	756	732
Total new cases	26,515	25,556	25,987

TABLE LXIX.  
ATTENDANCES OF INFANTS AND CHILDREN AT MATERNAL AND CHILD WELFARE CENTRES AND SUB-CENTRES.  
Metropolitan.

—	1949-50.	1950-51.	1951-52.
Fortitude Valley ..	22,561	19,804	16,925
Branches—			
Caboolture (to 5-1-52) ..	562	661	416
Clayfield .. ..	1,718	1,624	1,139
Dayboro (to 5-1-52)	352	183	184
Enoggera (to 30-11-51) ..	1,868	1,522	929
Hamilton .. ..	1,371	1,028	1,026
Hendra .. ..	1,357	1,102	1,566
Mitchelton (opened 2-12-49) (to 30-11-51) ..	422	1,340	499
Newmarket-Grange	1,523	1,114	976
Windsor .. ..	2,353	1,880	1,912
	34,087	30,258	25,572



*Metropolitan—continued.*

—	1949-50.	1950-51.	1951-52.
Herschell Street ..	15,639	13,407	12,356
Branches—			
Ashgrove (to 30-11-51) ..	3,541	3,253	1,436
Auchenflower (closed Nov., '49)	165	..	..
Bardon (to 30-11-51) ..	1,814	1,837	616
Corinda .. ..	3,096	2,409	2,053
Darra (opened 4-11-49) ..	359	454	718
Enoggera (from 1-12-51) ..	..	..	911
Graceville ..	2,322	2,137	2,426
Indooroopilly ..	1,319	1,432	1,252
Kelvin Grove (to 30-11-51) ..	1,569	1,222	474
Mitchelton (from 1-12-51) ..	..	..	701
Paddington (to 30-11-51) ..	1,552	1,486	770
Rosalie (to 30-11-51) ..	2,230	1,809	669
St. Lucia .. ..	520	386	548
Toowong .. ..	2,358	1,594	1,536
	36,484	31,426	26,466
Nundah .. ..	5,606	6,144	5,808
Branches—			
Cribb Island (to 5-1-52) ..	310	288	113
Geebung .. ..	391	378	653
Kedron .. ..	3,249	3,391	3,544
Redcliffe (to 5-1-52)	2,012	1,913	1,006
Sandgate (to 5-1-52) ..	3,545	3,145	1,703
Zillmere .. ..	257	328	667
	15,370	15,587	13,494
Paddington (from 1-12-51) ..	..	..	1,861
Branches—			
Ashgrove (from 1-12-51) ..	..	..	2,261
Bardon (from 1-12-51) ..	..	..	604
Kelvin Grove (from 1-12-51) ..	..	..	501
Rosalie (from 1-12-51) ..	..	..	966
	..	..	6,193
Sandgate (from 7-1-52) ..	..	..	1,896
Branches—			
Caboolture (from 7-1-52) ..	..	..	504
Cribb Island (from 7-1-52) ..	..	..	168
Dayboro (from 7-1-52) ..	..	..	125
Redcliffe (from 7-1-52) ..	..	..	988
	..	..	3,681
South Brisbane Sub-centres—			
Archerfield (opened 5-11-51) ..	..	..	194
Bulimba (from 2-7-51) ..	..	..	2,181
Camp Hill (from 2-7-51) ..	..	..	1,850
Holland Park (from 2-7-51) ..	..	..	2,435
Morningside (from 2-7-51) ..	..	..	2,018
Stones Corner (from 2-7-51) ..	..	..	969
	..	..	9,647

*Metropolitan—continued.*

—	1949-50.	1950-51.	1951-52.
West End .. ..	8,536	7,749	7,709
Branch—			
Beenleigh (from Dec., '49) ..	339	745	546
	8,875	8,494	8,255
Woolloongabba ..	19,050	17,717	18,533
Branches—			
Beenleigh (to Nov., '49) .. ..	308	..	..
Bulimba (to 30-6-51) ..	1,941	1,551	..
Camp Hill (to 30-6-51) ..	2,190	1,644	..
Ekibin .. ..	1,038	949	1,006
Holland Park (to 30-6-51) ..	2,226	1,916	..
Holland Park T.H.E. ..	822	559	729
Ipswich Road ..	2,402	1,998	1,753
Morningside (to 30-6-51) ..	1,623	1,863	..
Rocklea T.H. Estab. ..	917	585	961
Salisbury .. ..	1,036	852	729
Stones Corner (to 30-6-51) ..	708	635	..
Yeronga .. ..	1,893	1,615	1,487
	36,154	31,884	25,198
Wynnum .. ..	8,131	8,221	9,502
Branches—			
Cleveland .. ..	581	725	728
Manly (opened 9-11-51) ..	..	..	547
	8,712	8,946	10,777
<i>Country.</i>			
Atherton .. ..	2,085	2,462	2,089
Branches—			
Herberton .. ..	312	372	415
Malanda .. ..	816	701	687
Millaa Millaa ..	955	590	768
Ravenshoe .. ..	859	735	725
Tarzali (closed 8-6-51) ..	27	31	..
Yungaburra ..	293	170	159
	5,347	5,061	4,843
Barcaldine .. ..	1,221	1,251	1,381
Branches—			
Alpha (from 2-4-51) ..	..	51	196
Aramac .. ..	413	230	197
Jericho (from 2-4-51) ..	..	33	170
Longreach (to 2-4-51) ..	1,589	1,188	..
	3,223	2,753	1,944
Biloela .. ..	2,754	2,661	3,426
Branches—			
Baralaba .. ..	178	120	379
Goovigen .. ..	150	172	224
Jambin .. ..	136	63	163
Moura .. ..	131	118	177
Thangool .. ..	399	330	400
Theodore .. ..	407	257	523
Wowan .. ..	431	427	497
	4,586	4,148	5,789
Bowen .. ..	3,022	2,161	1,996
Branches—			
Collinsville ..	1,375	1,088	833
Murroona (opened 3-4-50) ..	246	192	324
Proserpine ..	1,346	1,714	1,196
	5,989	5,155	4,349



## Country—continued.

—	1949-50.	1950-51.	1951-52.
Bundaberg .. ..	8,708	8,410	8,019
Branches—			
Gin Gin .. ..	341	454	590
Miriam Vale (from 5-1-51) ..	..	117	245
	9,049	8,981	8,854
Cairns .. ..	9,354	10,920	9,732
Branches—			
Cooktown (opened 6-9-50) ..	..	179	240
Earlville (opened 2-8-50) ..	..	670	554
Edge Hill .. ..	955	1,329	1,050
Edmonton .. ..	302	429	441
Gordonvale .. ..	1,077	1,007	899
Kuranda .. ..	135	179	177
Mossman .. ..	899	1,016	828
	12,722	15,729	13,921
Charleville .. ..	3,165	2,966	3,581
Branches—			
Cunnamulla .. ..	893	884	657
Morven (opened 3-4-52) ..	..	..	8
Quilpie .. ..	516	456	184
	4,574	4,306	4,430
Charters Towers ..	3,706	3,187	3,110
Dalby .. ..	3,554	3,028	2,846
Branches—			
Chinchilla .. ..	1,836	1,533	1,410
Miles .. ..	727	742	674
	6,117	5,303	4,930
Emerald .. ..	1,432	1,172	1,157
Branches—			
Alpha (to 1-4-51) ..	94	51	..
Blackall (to 1-4-51) ..	746	494	..
Blair Athol .. ..	223	250	264
Capella .. ..	128	112	137
Clermont .. ..	584	312	327
Jericho (to 1-4-51) ..	37	19	..
Springsure .. ..	642	450	349
	3,886	2,860	2,234
Gayndah .. ..	1,269	1,151	1,200
Branches—			
Eidsvold .. ..	141	188	220
Monto .. ..	1,150	1,029	1,309
Mulgeldie (opened 23-8-49) ..	154	59	164
Mundubbera .. ..	603	514	918
	3,317	2,941	3,811
Gladstone .. ..	4,130	4,886	4,881
Branches—			
Calliope .. ..	204	195	165
Miriam Vale (to 4-1-51) ..	382	220	..
Mt. Larcom .. ..	1,048	1,136	945
	5,764	6,437	5,991
Goondiwindi .. ..	1,748	1,386	1,458
Branches—			
Dirranbandi .. ..	369	281	300
Inglewood .. ..	671	609	693
Texas .. ..	656	440	449
Yelarbon .. ..	424	264	284
	3,868	2,980	3,184

## Country—continued.

—	1949-50.	1950-51.	1951-52.
Gympie .. ..	5,816	6,078	6,255
Branches—			
Cooran .. ..	274	258	349
Imbil .. ..	247	224	330
Kandanga .. ..	209	256	219
Pomona .. ..	279	412	451
	6,825	7,228	7,604
Ingham .. ..	2,149	2,240	2,618
Branches—			
Cardwell .. ..	319	317	263
Halifax .. ..	707	822	711
	3,175	3,379	3,592
Innisfail .. ..	5,370	5,148	4,169
Branches—			
Babinda .. ..	1,192	1,047	991
El Arish .. ..	247	229	185
Mourilyan .. ..	180	174	120
Silkwood .. ..	209	179	142
South Johnstone ..	171	196	192
Tully .. ..	1,827	1,514	1,327
	9,196	8,487	7,126
Ipswich .. ..	12,774	12,123	12,200
Branches—			
Boonah .. ..	1,520	1,468	1,185
Esk .. ..	577	566	503
Laidley .. ..	918	836	688
Lowood .. ..	369	273	161
Rosewood .. ..	1,477	1,192	1,275
Somerset Dam .. ..	343	255	151
Toogoolawah .. ..	792	720	613
	18,770	17,433	16,776
Kingaroy .. ..	2,916	2,668	2,874
Branches—			
Kumbia .. ..	245	264	280
Nanango .. ..	653	546	476
Yarraman .. ..	252	150	180
	4,066	3,628	3,810
Longreach (from 2-4-51) ..	..	574	1,397
Branches—			
Blackall (from 2-4-51) ..	..	498	1,331
Muttaborra (opened 3-8-51) ..	..	..	80
	..	1,072	2,808
Mackay .. ..	8,807	7,945	7,407
Branches—			
Calen (opened 19-6-51) ..	..	3	128
Finch Hatton .. ..	424	385	399
Koumala .. ..	297	297	170
Marian (opened 25-1-51) ..	..	137	291
North Mackay .. ..	1,758	1,493	1,891
Sarina .. ..	1,074	1,251	1,550
	12,360	11,511	11,836
Mareeba .. ..	3,252	2,809	2,251
Branches—			
Dimbulah .. ..	756	872	550
Mt. Mulligan .. ..	273	329	245
	4,281	4,010	3,046



Country—continued.

—	1949-50.	1950-51.	1951-52.
Maryborough ..	7,868	7,549	7,621
Branches—			
Biggenden ..	1,108	713	613
Childers ..	716	558	572
Howard ..	457	459	616
Pialba ..	714	544	696
	10,863	9,823	10,118
Mt. Isa ..	2,317	3,053	3,987
Branches—			
Camooweal ..	107	219	114
Cloncurry (from 2-1-51) ..	..	227	489
	2,424	3,499	4,590
Mt. Morgan (from 21-8-50) ..	..	2,477	2,727
Branches—			
Baree (opened 5-6-51) ..	..	28	422
Red Hill (opened 7-6-51) ..	..	6	61
	..	2,511	3,210
Murgon ..	1,619	1,642	1,801
Branches—			
Goomeri ..	706	672	914
Hivesville ..	115	99	45
Kilkivan ..	207	311	260
Proston ..	176	214	238
Wondai ..	934	1,125	1,348
	3,757	4,063	4,606
Nambour ..	4,631	4,737	3,550
Branches—			
Buderim ..	200	236	78
Caloundra ..	568	624	406
Cooroy ..	1,639	1,224	826
Eumundi ..	213	165	252
Landsborough ..	110	159	184
Maroochydore ..	591	525	480
Palmwoods ..	250	334	342
Yandina ..	305	235	209
	8,507	8,239	6,327
Railway Car—			
Winton ..	484	424	579
Cloncurry (to 1-1-51) ..	324	202	..
Dajarra (to Dec.'50) ..	45	36	..
Hughenden ..	956	936	1,173
Julia Creek ..	432	500	558
Kajabbi (to Dec.'50) ..	20	26	..
Maxwelton (from 19-3-51) ..	..	103	164
Richmond ..	277	396	261
	2,538	2,623	2,735

Country—continued.

—	1949-50.	1950-51.	1951-52.
Rockhampton ..	16,602	15,565	14,211
Branches—			
Mt. Morgan (to 20-8-50) ..	1,995	288	..
North Rockhampton (opened 21-8-50) ..	..	1,175	1,551
Ogmore ..	245	176	280
St. Lawrence ..	300	465	332
Yeppoon ..	1,043	1,062	1,067
	20,185	18,731	17,441
Roma ..	2,462	2,321	1,350
Branches—			
Dulacca .. (opened 29-8-49) ..	127	103	49
Jackson (opened 5-9-49) ..	116	121	93
Mitchell ..	1,163	1,196	768
Surat (opened 21-9-49) ..	258	355	211
Wallumbilla ..	177	196	97
Yuleba ..	118	176	214
	4,421	4,468	2,782
Southport ..	3,835	3,286	2,539
Branches—			
Beaudesert ..	1,655	1,689	1,496
Burleigh Heads ..	581	352	771
Coolangatta ..	2,794	2,567	2,548
	8,865	7,894	7,354
Toowoomba ..	10,359	9,983	9,640
Branches—			
Clifton ..	326	369	443
Crow's Nest ..	464	555	589
Forrest Hill ..	107	146	157
Gatton ..	1,318	1,353	1,201
Harristown (opened 4-5-50) ..	58	507	685
Oakey ..	800	753	633
Pittsworth ..	904	962	1,065
	14,336	14,628	14,413
Townsville ..	13,167	12,530	14,122
Branches—			
Ayr ..	3,580	3,742	4,340
Giru ..	624	585	653
Home Hill ..	2,611	2,551	2,693
	19,982	19,408	21,808
Warwick ..	4,162	3,798	3,670
Branches—			
Allora ..	547	337	396
Killarney ..	346	414	397
Stanthorpe ..	2,368	2,112	1,681
	7,423	6,661	6,144
Social Welfare Services	1,046	1,877	4,191
TOTAL ATTENDANCES OF INFANTS AND CHILDREN AND EXPECTANT MOTHERS.			
1949-50.	1950-51.	1951-52.	
382,227	361,977	367,748	

TABLE LXX.  
ANTE-NATAL CLINICS.

Centre.	1949-50.		1950-51.		1951-52.	
	New Cases.	Attend-ances.	New Cases.	Attend-ances.	New Cases.	Attend-ances.
Fortitude Valley ..	65	489	58	408	67	519
Woolloongabba ..	79	530	86	534	111	778
Caboolture ..	24	147	24	112	28	188
Herschell Street ..	7	32	15	30	13	19
Nundah ..	3	12	3	4	5	7
West End ..	7	32	6	21	12	24
	185	1,242	192	1,109	236	1,535



## DIVISION OF SCHOOL HEALTH SERVICES.

Chief Medical Officer: P. R. PATRICK, M.B., B.S. (Qld.).

Chief Inspector, School Dental Services: E. W. HAENKE, L.D.Q.

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### SCHOOL HEALTH OBJECTIVES.

In all fields of medicine at the present time, more attention is being paid to prevention. Recent advances in prevention, diagnosis and treatment have altered the picture of child health. Many conditions, for which formerly the only control was treatment, are now being prevented. These changes are reflected in mortality rates and the conditions requiring treatment found during School Health examinations. There has been a considerable reduction in the number of beds required to treat children suffering from diphtheria and other infectious diseases. The admissions to hospital due to communicable disease, with the exception of poliomyelitis, are almost negligible to those of thirty or forty years ago. A study of mortality rates shows that in children of school age, the leading cause of death is not disease, but accident.

In Table LXXI., which was prepared by the State Statistician, the actual number of deaths and the rates per 100,000 among school children for the years 1910 and 1950 are compared. A study of this table shows great overall improvement, but there is still room for further improvement in many causes. From this table, School Health Services and all interested in Child Health, can learn where to apply their future endeavours in the betterment of the health of children.

The following points are of special interest. In forty years, the overall death rate has dropped from 166 to 70 per 100,000. There has been a considerable reduction in the rate due to disease. This applies particularly to mortality from respiratory disease, appendicitis, gastroenteritis and colitis, typhoid fever and diphtheria. This reduction is pleasing, but the table also records too many deaths from preventable diseases. With the weapon of immunisation at our disposal, there should be no expression of satisfaction until there are no deaths recorded from tetanus and diphtheria.

While there has been a reduction in the death rate from violence and accidents, the position is far from satisfactory. There has been a reduction in mortality due to drowning and accidents caused by animals and with the advent of the motor car, an increase, perhaps expected, in the vehicle accident death rate. A comparison of all single causes of death for 1950 shows the leading cause to be drowning, followed by vehicle accidents, and respiratory disease.

The leading cause of death among school children is now accident, and it is obvious that a campaign against accidents is a constant need.

School Health Services (if they are to give the best value to the children they serve) must make use of latest medical practices, provided they are sound. Special attention must be paid to those health problems which occur most frequently during school age. In keeping with the policy of prevention, emphasis must be placed

on all measures which prevent disease and promote better health, as well as drawing attention to diagnostic and treatment services.

A study of mortality statistics mentioned and the lists of defects found among school children reveals that conditions which most commonly occur are dental caries, accidents, defective vision, unhealthy tonsils and adenoids and communicable disease.

The actual number of children found to have dental caries is mentioned later in this report. It is by far the most prevalent defect in school children. The Chief Dental Inspector is of the opinion that the children with the best dental health in Queensland are those who have regular care, and those who drink artesian well water. The latter group contains the greatest number of children with what are termed "naturally sound mouths." These facts do appear to point to the benefit accruing from the presence of fluorine in drinking water.

In the matter of health education, the policeman who lectures to school children on road safety is performing a very commendable task. The road, however, is not the only site of accidents, and instruction on safety in the home and at play, must all be included in a school health education programme. In all programmes of health for children, emphasis should be placed on teaching them how to swim, to play safely and to learn road safety measures.

Present day medical opinion is becoming more conservative regarding the indications for removal of tonsils and adenoids. In Queensland, School Health Services has endeavoured to keep in step with this modern trend. In the metropolitan area, where all children who are referred for further medical examination, are first seen by a medical officer, the number of children referred for unhealthy tonsils has now dropped to less than those referred for defective vision. Out of 24,376 children examined in the metropolitan area, 450 were referred for defective tonsils, being 1.84 per cent. of those seen. There is no doubt that even this percentage is too high. In the country, where due to lack of staff the school sister refers children without an examination by a school medical officer, the percentage of children referred for unhealthy tonsils was higher than the city. The nurse, with her lack of diagnostic training, tends to refer more borderline cases. A survey of children during their first examination at school in respect to tonsillectomies already performed prior to school entry, revealed that amongst school children from housing settlement, the percentage of children with tonsils already removed was less than twenty. In children from a good residential area, the percentage of children with previous surgical attention to tonsils was about double. No doubt, it will be said that the difference is due to better parental care, but it



must be added that the children from the housing commission school, while having more skin infections and associated diseases, did not seem to have suffered from this lack of removal of tonsils.

During the year, the total number of school children reported to have been suffering from notifiable communicable diseases was 333. The greatest number were from poliomyelitis 151, scarlet fever 97, and diphtheria 47. The scarlet fever cases were mainly mild. The diphtheria cases due, no doubt, to immunisation, are much less than forty years ago. The part School Health Services can play in further reductions lies in continuing its assistance in Immunisation campaigns and health education. It is to be hoped that the day is not far off when protection can be given by a poliomyelitis vaccine, and the School Health Services can help here also in a reduction in the incidence of this disease.

#### STAFF.

The field staff during 1951-1952 has remained approximately the same. The two school medical officers stationed at Townsville and Brisbane respectively, have continued the policy of examining all children of school entry age, and those older children who have been selected for further examination, after screening by the school nurse. No district has been without the services of a school nurse although there were vacancies for a second nurse at Townsville and Rockhampton. An increase of two dental officers made it possible to keep all dental districts filled and allot a second officer in two areas. There are still many districts where the appointment of a second dentist is needed to reach the desired standard of annual dental examinations.

At the end of the year, the field staff consisted of—Chief Medical Officer, two full-time Medical Officers, one part-time Medical Officer, one Chief Dental Inspector, 23 full-time and one part-time Dental Inspectors, 19 School Sisters.

#### ROUTINE MEDICAL INSPECTIONS.

During the year 1951-1952, medical officers and school sisters medically examined 81,691 children. Of these, 24,376 were attending Brisbane schools, and 8,177 were examined by a medical officer. In North Queensland, where a medical officer is also stationed, 4,151 children had a similar examination.

The total number of defects notified to parents was 4,260 which constitutes 5.2 per cent. of all children examined. This does not include dental defects. During the year, 854 children in the metropolitan area, and 2,177 in the country, received medical attention as a result of a notification from this Service. This is not necessarily a true indication of the proportion of parents who acted on advice received from a School Health Officer. There is always a lapse of two or three months before the results of a medical inspection can be ascertained. Notifications have to be sent out, appointments have to be made and the results forwarded from the parent to the head teachers.

In order to ascertain the action taken by parents after receiving notification of a defect from this service, it was decided to keep an accurate check of individual children from the beginning of 1952. This examination shows that of 414 children notified as suffering from a

defect, 317 parents sought medical attention as a result. This shows that at least 76.57 per cent. of parents acted on the advice received. It is possible that the proportion is much higher.

#### COMMUNICABLE DISEASES IN SCHOOLS.

The incidence of communicable diseases amongst school children in 1951-1952 was less than the preceding year. Except for poliomyelitis, the numbers of children suffering from communicable disease was not high. In the metropolitan area, poliomyelitis reached its highest incidence in July, 1951. There was then a lull for a month or so, with the approach of summer, the numbers increased, and then became much fewer in the autumn of 1952.

Very few cases occurred in schools in which there had been cases in the previous twelve months. Amongst country schools, the number of cases was much less than 1950-1951. Only in Ipswich schools, where practically no cases had been reported in the preceding year, was there any marked increase. During March, 1952, the incidence and severity of cases occurring had become much less and on the advice of the Poliomyelitis Advisory Council, the restrictions on organised school sport and physical activities at schools were lifted. No schools were closed as a precaution against poliomyelitis during the year. Cases of scarlet fever occurred at sporadic intervals during the year, with an increase in the metropolitan area during June, 1952. The disease continues in a mild form.

#### ALTERATION OF COMMUNICABLE DISEASES

##### EXCLUSION PERIODS.

As a result of recommendations of the National Health and Medical Research Council and discussion at a conference of School Medical Officers from all States, the regulations governing the periods school children suffering from communicable diseases and their home contacts are excluded from school were revised during the year. The new regulations are in accord with modern medical opinion of immunisation, prophylactic therapy and the use of antibiotics and new drugs in the treatment of these diseases. In most of the common virus diseases, it is believed that school age is the best age at which to contract the complaint. In both the pre-school child and the adult, the complications are more serious than in the primary school child. Any exclusion from school for such diseases as measles, mumps and chickenpox is enforced, not with the idea of prevention of further spread, but to ensure adequate time for convalescence in the patient. Deliberate exposure of school girls to German measles with the idea of producing immunity and thus preventing congenital abnormalities resulting from infection with the disease during pregnancy, is sound medical practice. In nearly all diseases, the times of exclusion for both sufferer and contacts have been reduced. In several of the more common virus diseases, the contacts are not excluded at all. It is expected that the regulations will be adopted as a uniform measure by all States.

#### IMMUNISATION.

School Sisters have continued to assist local authority health departments in immunisation campaigns. On the whole, this help has been confined mainly to the Brisbane area where 647 children were given initial immunisation for diphtheria and 3,961 children were given booster doses, at schools. The Brisbane City Council



have commenced immunisation for tetanus. As far as school children are concerned, this is being confined to "school-leavers."

From School Sisters' reports, it is noted that the percentage of school children immunised against diphtheria is 93.88 in Brisbane and 89.78 in the country.

At Gatton College, School Health Service officers immunised 238 students for tetanus and typhoid fever. In addition, 106 booster doses for tetanus were given.

#### EXAMINATION OF TEACHER TRAINEES.

Out of 237 student teachers examined for entrance to the Teachers' Training College, it was found necessary to reject two female students as being medically unfit; one had a rheumatic heart condition and the other was suffering from pulmonary tuberculosis. This latter girl was detected during Mantoux testing, and subsequent radiological examination given to all students by the Director of Tuberculosis. In the three years this special examination has been in force, 571 students have been tested and two female applicants have been found to be suffering from pulmonary tuberculosis. The first case proved to be an early one and after treatment, she was admitted to the teaching service. The second case is more advanced and will need treatment extending over some considerable time. Neither of these students presented any symptoms or signs during the ordinary clinical examination.

#### SPECIAL SCHOOLS.

*The Backward Child.*—Children who do not progress normally at schools may be divided into two large groups, viz., those whose general intelligence is below normal and those who have normal intelligence, but for some reason are not advanced educationally as children of the same age. All educationally backward children are not dull mentally, but all mentally dull children are backward at school.

For some years in this State, the entrance to Opportunity schools where special education is provided for the educationally backward children has been rather haphazard. With the recent establishment of the Research and Guidance Branch of Public Instruction, all cases for admission have been thoroughly investigated. From the beginning of 1952, School Health Services has co-operated by medically examining these children after interviewing the parents. Particular attention is paid to vision and hearing and other defects which are likely to cause retardation at school. It is unfortunate that in many cases the backwardness is due to an inborn lack of general intelligence.

In addition to these children, another group of normal children who are educationally backward are medically examined before undergoing special instruction at a Remedial Education Centre which the Faculty of Education of the University of Queensland commenced at the beginning of 1952. In these children, one of the commonest causes of their backwardness is the home environment.

In addition to these special examinations, children already attending Opportunity Schools and Classes in Brisbane, Ipswich and Rockhampton, were medically examined.

*The School for Blind and Deaf.*—The number of children attending the School for Blind and Deaf was slightly higher, there being 24 blind

children and 232 deaf children at the school. The Commonwealth Acoustic Laboratory has supplied two more portable audiometers for use by school health officers in country districts. In the Toowoomba area where the first of these instruments was sent, 2,547 children were tested and 34 were found to have some degree of hearing loss. In Brisbane, 56 children were referred to the Commonwealth Acoustic Laboratory for further testing.

#### PHYSICAL EDUCATION.

During 1951-1952, School Health Services co-operated with the Physical Education Departments of the University of Queensland and the Department of Public Instruction. The University is conducting a survey of school children to determine factors which influence physical skills and activities. Full medical examinations by School Health Officers are being included in the investigations. The survey should help in establishing special physical activities for children who do not participate in the normal programme. Often the child with some mental or physical defect misses the benefits from school games and physical education. It is hoped that the survey will find an answer to such problems.

#### SCHOOL MEDICAL OFFICERS' CONFERENCE.

The Chief Medical Officer attended a Conference of School Medical Officers from all States held in Sydney in September, 1951. While every aspect of school health was discussed, emphasis was placed on the evaluation of present-day services and the avenues along which future improvements may lie. Resolution XI. passed at the Conference sums up the philosophy of school health circles in Australia today. It reads as follows:—"At the time when School Medical Services were first created, i.e., about 40-50 years ago, they were concerned mainly with the discovery of physical defects. Although this is still an important function, much more is attempted today, and the object of a school health service should be the maintenance of the health of the school population at the highest level, so that all children can derive the maximum benefit from education and ultimately be able to leave school mentally and physically fit to play their full part in the community. To attain this, it is necessary to have continuous supervision of a child's physical and mental health, and as a rule, this is achieved by full co-operation between teachers, parents and officers of the school health service."

#### THE DENTAL SECTION.

The total of full-time dentists at present employed by School Health Services is twenty-four. Two new school dentists were appointed at the beginning of 1952. During the year, the dental staff treated 29,667 out of 40,133 children examined. Dental caries is still by far the commonest defect found in Queensland children. The percentage of children with naturally sound teeth and operatively restored remained much the same as previous years. Only nine per cent. of the children examined were free of caries. A further twenty per cent. were free of caries at the time of inspection, but had already had previous dental treatment. This leaves 71 per cent. of children with some degree of caries. In the Chief Dental Inspector's report, attention is drawn to the reduction of caries incidence and improvement in dental



hygiene in two groups of children, viz., those who have regular dental care and those living in areas where the water drunk is from artesian wells and contains fluorine.

There are three possible ways of improving dental health—(1) an increase in regular dental attention, (2) fluoridation of public water supplies providing the addition of fluorine is carried out under strict supervision and scientific control to ensure that the percentage does not exceed accepted standards, and (3) correct diet.

THE WILSON OPHTHALMIC SCHOOL HOSTEL.

The discharge of the last patient needing special treatment for trachoma marks the closing of a chapter in the story of the fight against the disease in children of Western Queensland. While the final chapter is not yet written—indeed may never be—it must be pleasing to those who initiated the campaign against the disease, to see the incidence and the severity become so low that the Hostel could be handed over to the Children’s Hospital for treating long-stay orthopaedic cases. There have been three modes of attack on the disease, and while some of the alterations in the picture may be due to natural change in the organism, it is felt that all three have contributed to the happy position at present. The three phases were health education—mainly in schools by the teachers, regular inspection and treatment of the children by local practitioners, with visits at suitable intervals by the part-time ophthalmologist and treatment of the severe cases at the Wilson Ophthalmic School Hostel. The medical practitioners in Western Queensland are continuing to visit the schools and instruction in personal and eye hygiene is still being given in the schools.

TABLE LXXI.

SHOWING DEATHS IN QUEENSLAND OF CHILDREN AGED 5 YEARS AND UNDER 15 YEARS AND THE EQUIVALENT RATE PER 100,000.

Children of the same Age Group—Queensland  
1910 and 1950.

Cause of Death—Disease.		1910.	1950.
Tuberculosis (all kinds) ..	Number	6	4
	Rate	4.76	1.98
Typhoid Fever ..	Number	8	..
	Rate	6.35	..
Diphtheria ..	Number	15	4
	Rate	11.91	1.98
Whooping Cough ..	Number	5	..
	Rate	3.97	..
Tetanus ..	Number	7	7
	Rate	5.56	3.46
Measles ..	Number	3	5
	Rate	2.38	2.47
Malignant Neoplasms ..	Number	7	12
	Rate	5.56	5.92
Rheumatic Fever ..	Number	3	6
	Rate	2.38	2.96
Heart Diseases ..	Number	16	4
	Rate	12.71	1.98
Diseases of the Respiratory System	Number	23	14
	Rate	18.26	6.91
Appendicitis ..	Number	10	2
	Rate	7.94	.99
Gastro-Enteritis and Colitis	Number	8	4
	Rate	6.35	1.98
Nephritis (all kinds) ..	Number	5	2
	Rate	3.97	.99
Other Diseases ..	Number	37	36
	Rate	29.38	17.77
Total Diseases ..	Number	153	100
	Rate	121.49	49.37

Cause of Death—Accident.		1910.	1950.
Drowning ..	Number	21	15
	Rate	16.68	7.41
Vehicle Accidents ..	Number	6	14
	Rate	4.76	6.91
Accidents caused by animals	Number	8	2
	Rate	6.35	.99
Other Accidents and Violence	Number	21	12
	Rate	16.68	5.92
Total Violence and Accidents	Number	56	43
	Rate	44.47	21.23
Total All Causes ..	Number	209	143
	Rate per 100,000 Population ..	165.96	70.59

TABLE LXXII.

TABLE OF FINDINGS—SCHOOL HEALTH SERVICES  
—1951-52.

Number of visits paid to Schools on Medical Inspection by School Sisters—

Metropolitan ..	82
Country ..	839

Number of children examined by School Sisters—

Metropolitan ..	24,376
Country ..	57,315

Number of children whose parents were notified of child’s defect—

Metropolitan ..	1,287
Country ..	2,973

Number of children known to have been treated by medical practitioners—

Metropolitan ..	854
Country ..	2,177

Number of homes visited by School Sisters—

Metropolitan ..	25
Country ..	362

Number of parents interviewed at schools by School Sisters—

Metropolitan ..	30
Country ..	127

Apparent physical defects discovered by metropolitan and country Schools Sisters—

TABLE LXXIII.

Defect.	Metropolitan.	Country.	Total.
Defective Vision ..	429	820	1,249
Strabismus ..	23	100	123
Other Eye Defects ..	26	79	105
Deafness ..	28	99	127
Ear Discharge ..	9	22	31
Nasal Defects ..	37	430	467
Tonsils ..	450	1,261	1,711
Scabies ..	15	105	120
Impetigo ..	128	431	559
Other Skin Defects ..	10	171	181
Pediculosis ..	492	365	857
Groin Swelling ..	54	125	179
Scrotum Swelling ..	22	55	77
Spinal Defects ..	12	61	73
Other Defects ..	242	462	704
Teeth.. ..	739	..	739

Number of cleanliness visits made by School Sisters to schools—

Metropolitan ..	23
Country ..	30

Number of children examined—cleanliness visits by School Sisters—

Metropolitan ..	3,617
Country ..	3,637



Defects found on special cleanliness visits by Metropolitan and Country School Sisters—

TABLE LXXIV.

Defect.	Metropolitan.	Country.	Total.
Pediculosis .. ..	207	124	331
Impetigo .. ..	5	22	27
Scabies .. ..	6	19	25
Other Skin Defects ..	5	14	19

Number of cases of Diphtheria in School Children—

Metropolitan .. ..	12
Country .. ..	35

Number of cases of Scarlet Fever in School Children—

Metropolitan .. ..	58
Country .. ..	39

Number of cases of Poliomyelitis in School Children—

Metropolitan .. ..	77
Country .. ..	74

Number of cases of Cerebro-spinal Meningitis in School Children—

Metropolitan .. ..	1
Country .. ..	4

Number of cases of Tetanus in School Children—

Metropolitan .. ..	6
Country .. ..	11

Number of cases of Malaria in School Children—

Metropolitan .. ..	1
Country .. ..	3

Number of cases of Tuberculosis in School Children—

Metropolitan .. ..	3
Country .. ..	8

Number of cases of Lead Poisoning in School Children—

Metropolitan .. ..	..
Country .. ..	1

SCHOOL DENTAL SERVICE.

INSPECTION.

Table LXXV. details the total findings revealed at the different inspections of the full staff of school dental officers during the year:—

TABLE LXXV.

Number of Children Examined.	Number Notified for Professional Attention.	Number of Children under Regular Dental Care.			Number with Sound Mouths.		Carious Teeth Saveable (Permanent).	Carious Teeth Unsaveable (Permanent).	Temporary Carious Teeth.	Permanent Teeth Lost or Extracted.	Six-year Molars Extracted.
		Clinic.	School Dental Officer.	Private Dentist.	Natural.	Operatively Re-stored.					
40,133	11,960	1,675	9,150	6,286	3,829	7,821	47,160	4,253	48,524	11,021	9,021

TABLE LXXV.—continued.

Permanent Teeth Filled.	Temporary Teeth Filled.	State of Mouth.			Use of Tooth Brush.			Percentage of Children with Dirty Mouths.	Total Number of Defective Permanent Teeth.	Average Number of Defective Permanent Teeth per Child.
		A.	B.	C.	A.	B.	C.			
52,628	12,630	10,121	27,002	3,010	14,301	23,417	2,415	7	51,413	1.2

CLINICAL PHASE OF SERVICE.

Tabulated hereunder are summaries furnishing particulars of the treatment resulting from the clinical activities associated with the Department's dental service for the period under review. The summary does not include the treatment performed throughout the State by Hospital Board Dental Clinics.

TABLE LXXVI.

Number of Children Treated.	Number of Extractions Performed.	Number of Fillings Inserted.	Number of Other Treatments.
26,785	29,667	68,740	34,128

TOTAL TREATMENT PERFORMED FOR CORRESPONDENCE PUPILS.

Number of Children Treated.	Number of Extractions Performed.	Number of Fillings Inserted.	Number of Other Treatments.
71	107	195	106

WILSON OPHTHALMIC SCHOOL HOSTEL.

Table LXXVII. gives a summary of the statistics of the Wilson Ophthalmic Hostel for the year 1951-52:—

TABLE LXXVII.

—	Males.	Females.	Total.
Population at 1st July, 1951	12	15	27
Admissions .. ..	2	4	6
Discharges .. ..	14	19	33
Population at 30th June, 1952	..	..	..

Last admission 15th December, 1951.

The continued lessening in severity and incidence of trachoma over the last few years, with consequent reduction in the numbers suitable for admission resulted in the closure of the Hostel for the treatment of trachoma on 31st May, on which date the last patient was discharged. The Hostel is now used for the after-treatment of poliomyelitis.



The history of the Wilson Ophthalmic Hostel is one of achievement. Previous to 1929 severe cases of trachoma were treated at the Brisbane Children's Hospital. The late Dr. L. St. Vincent Welch (the then Chief Medical Officer, School Health Services) was appalled at the prevalence and seriousness of the disease in Western school children during his visits to the schools of that area, particularly in regard to the number of children not receiving adequate treatment. He prevailed upon the Honourable T. Wilson, the then Minister for Public Instruction, to recommend to Cabinet the establishment of the Hostel, which was named the Wilson Ophthalmic School Hostel.

It is to be regretted that Dr. St. Vincent Welch did not live to see the closure of the Hostel, which should always be remembered as a memorial to him and the work he did for the children of out-back Queensland.

With the name of St. Vincent Welch I would couple both medical and nursing staff, but would particularly mention Miss Walpole, the first matron, who was in charge for so many years, and who set the high standard which was continued during the subsequent years, and Dr. E. O. Marks.

Dr. Marks, in his capacity as Honorary Senior Ophthalmologist, Hospital for Sick Children, was associated with trachoma for many years prior to 1929, and it was fitting he should be appointed Part-time Ophthalmic Officer to the Hostel in 1932, which position he has held until the last patient was discharged.

It is the intention of the Department to continue surveying the school children for trachoma, and Dr. Marks has consented to carry out a survey in 1953.

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## DIVISION OF MENTAL HYGIENE.

Director of Mental Hygiene: B. F. R. STAFFORD, M.B., B.S. (Melb.).

The Honourable the Minister for Health and Home Affairs approved of a procedure that has already paid dividends. The Medical Superintendent of the Brisbane Mental Hospital visited hospitals in Victoria and New South Wales while the Medical Superintendent of the Toowoomba Mental Hospital visited hospitals in Tasmania as well. These inspections were of great value to the officers concerned as the opportunity was taken to observe points of administrative procedure and treatment which might be worthwhile introducing into the hospitals under their charge. The knowledge gained by the Medical Superintendents has greatly assisted in conducting an active campaign, throughout the mental hospitals, to achieve the highest possible social organisation within these institutions.

In order to give effect to the Government's policy of creating a more congenial environment to assist patients towards recovery, a new recreation ground and canteen is being built on the river bank at the Brisbane Mental Hospital. The area is being developed as park grounds, gardens and sports grounds. It will contain a croquet lawn, a tennis court and a bowling green.

The canteen is designed as a club house in which some 400 female patients will be able to obtain cafeteria meals away from their wards.

A bowling green is nearing completion for the male patients in their recreation area.

The problem of accommodation is being attacked at the present time by the construction of a new mental hospital at Charters Towers. It will be some months yet before any of the buildings can be occupied but steady progress is being made.

The problem of classification will be eased by the development of a farm colony scheme, the construction of which is proceeding. It had been hoped that construction would have commenced on the Wacol "Eventide" Home. The provision of a special service for those suffering from senility is a real need.

Tradition dies hard and the historic stigma of mental sickness has permeated into most places. By pursuing, in the past, a policy of essentially custodial care, our hospitals have built up a tradition and an organisation wherein it may be difficult for any patient to assume normal social conduct. This drive to alter social standards within mental hospitals brings to the forefront the urgent need for effective classification which in turn emphasizes the need for more buildings, more trained staff, more specialists in ancillary services and a parallel development in the training of staff and in clinical research.

Opportunity has offered to establish an Eventide Home for these patients in the Darling Downs Region. The establishment of this institution will give valuable experience in administration and organisation.

Facilities for the special care and treatment of backward children remain plans. A very serious aspect of this service is to know exactly what the problem is as to extent and as to the degrees of backwardness. Information available is incomplete but does show the need for special training and occupational centres as well as special residential institutions.

Amongst other needs the provision of special facilities for the care of the volitional patient is the most important. In this era of preventive medicine the Mental Hygiene Service lags behind in that no hospital exists for the treatment of cases before they become mentally sick.

There is great scope in our mental hospitals for the growth of a research organisation in clinical psychiatry and in neuropsychiatry. It is probable that this will evolve as the outcome of increased efforts to create a higher standard in the teaching and training of nursing staff.

Regular dances, picture shows and concerts are held in all the mental hospitals. Thanks are extended to the many societies and people who contribute towards the added entertainment and welfare of the patients.

The religious interests of all patients are attended to by visits from the clergy of the various denominations and by religious services which are held regularly.

The Official Visitors appointed to the mental hospitals have made regular inspections.

An overall survey of patients in Mental Hospitals as at 30th June, 1952, is shown in appended statistical tables. Important trends shown in these tables are:—

TABLE LXXVIII.

—	1950-51.	1951-52.	Increase or Decrease.
1. No. of patients admitted	921	1,002	+81
2. No. of patients discharged	496	630	+134
3. No. admitted suffering from senility .. ..	155	222	+67
4. No. admitted suffering from mental deficiency	112	125	+13

### BRISBANE MENTAL HOSPITAL.

Medical Superintendent: C. R. BOYCE, M.B.  
(Syd.).

The Brisbane Mental Hospital, with two thousand two hundred and eighty-five patients, constitutes a large community. This is the daily average of patients treated at the Brisbane Mental Hospital for the fiscal year of 1951-52. To this total can be added some six hundred and ten persons occupying various posts on the staff of the hospital.

This community of 2,895 persons is a veritable city and its services, supplies and medical organisations are becoming more numerous and more complicated each year.



There is no limit that can be set to the growth of the Metropolitan mental hospital service. It must provide a service the extent of which will bear a fairly constant ratio to the population.

The overcrowding in this hospital is serious, but attempts to solve this should not be the construction of more accommodation and the building of more wards. The time is at hand when every endeavour should be directed towards the development of new services within the Division of Mental Hygiene. Planning in this direction is important because it will lessen the grave danger of overtaxing existing facilities such as kitchens, laundry, maintenance, stores, &c., and also because it can achieve decentralization. Decentralization can readily develop in association with efficient classification of patients and with the specialised treatment of particular groups.

The building of a farm colony has commenced on a site that lends itself to the ultimate establishment of an institution for the certified Backward Persons.

A particularly fine site has been procured for the Wacol "Eventide" Home. Planning is still proceeding in connection with this Home which will provide special care for those who have become incompetent because of old age. The number of aged folk admitted to our mental hospitals makes this project one that could be justly considered of great urgency.

One of the trends in a very large hospital is for a great intensity of therapeutic effort to be directed towards the recovery of the recently admitted patients. There is, however, a definite risk that the enthusiasm for treatment does not reach the patients whose recovery is slow and tedious. In order to attack this problem occupational therapy, recreation therapy and physical culture have been organised throughout the hospital. These therapies have given encouraging results and are now being undertaken on an elaborate scale. It is felt that this effort to prevent the insidious drift towards chronicity will more than repay the cost of cricket grounds, tennis courts, bowling greens, croquet lawns and the modern cafeteria dining service that is nearing completion in the new female recreation park.

The patients' fancy dress ball was revived at Christmas and was a brilliant success. The enthusiastic efforts of the staff should ensure that this function becomes an annual entertainment.

Mrs. Bestman and party introduced an innovation to this hospital. They generously offered their services to teach and encourage part-singing and choral activities. Already over forty patients have joined this group.

Appreciation is expressed for the help given by the Red Cross Society, the Country Women's Association, the Salvation Army, the Friends and Relatives Association, Mesdames Smibert and Kelly, Messrs. Monty Bloom, Noel Harvey and Noel Hall.

Religious services in the Goodna township have been regularly attended by groups of patients. The clergy of the several denominations have visited the hospital to conduct services and to visit patients.

#### WACOL REPATRIATION PAVILION.

This Institution continues to develop along satisfactory lines and the grounds are becoming more picturesque and enhanced as the gardens, foliage, plants and lawns develop.

A number of the patients herein are Diggers from World War 1 and as they are becoming elderly they enjoy quietude rather than active diversion and they are admirably served by these grounds.

Recreational activities are being further developed whilst occupational and vocational therapies continue to play an important role in treatment.

On Anzac Day, 1952, a most impressive service was again held and fulfilled the promise of the previous Anzac Day ceremony that such would be likely to become a feature amongst Anzac Day celebrations.

The entertainment of patients is well provided for by indoor games, regular concerts and picture shows whilst out of doors competitive cricket and tennis games with teams from other institutions are enjoyed and regular bus trips to the several seaside resorts are provided.

The Pavilion is visited regularly by officers of the Repatriation Commission and frequently by officials from the staff of the Deputy Commissioner of Repatriation for Queensland.

#### TOOWOOMBA MENTAL HOSPITAL.

Medical Superintendent:

J. H. B. HENDERSON, M.B., B.S. (Syd.).

The Admission Wards "VI." and "F" have greatly improved in appearance and comfort by additional furniture, soft furnishings, repainting, &c. The attractiveness of these wards has greatly added to their therapeutic value. Since the development of the Psychiatric Clinic at the Toowoomba General Hospital a greater percentage of admissions are voluntary patients. 47.48 per cent. of admissions were voluntary, which is an increase of 12 per cent. on the previous year, whilst the total of 139 admissions exceeds the total of last year by 18.

The appointment of a Psychologist has already proved a considerable benefit to the Hospital, the Epileptic Home, the Psychiatric Clinic and various local bodies.

An advance has been made at the Psychiatric Clinic with the allocation of beds at the General Hospital and the purchase of an electrotherapy machine by the Hospitals Board.

Occupational and recreational therapies have expanded. An innovation during the season was an all-day cricket match between a visiting patients' team from the Brisbane Mental Hospital and the local patients' eleven. It is anticipated that annual sporting contests will be played between teams representing the two hospitals.

A children's playground with see-saws, swings, and rocking boats has been constructed. A member of the staff is now supervising games and callisthenics and this officer has produced an organised use of the existing facilities for tennis, badminton, deck tennis, billiards, bobs, quoits, etc.

This hospital receives a number of patients by transfer and consequently tends to have a percentage of its patient population that is rather



statie. Vocational occupations are being developed and it is expected that a large number of patients will benefit by the productivity of this work.

Portion of the lecture room has been converted into a pathological laboratory and now many investigations can be carried out at the hospital.

Unfortunately, however, the female nursing position has not advanced *pari passu* with all these developments. There still exists a grave shortage of female nurses and especially amongst those with qualifications and experience.

The Department is aware of this situation and is making persistent efforts to remedy the nursing shortage. As the result of this persistent Departmental effort associated with other factors outside its control there is a trend indicating that more trainees will be available.

#### IPSWICH MENTAL HOSPITAL.

Medical Superintendent: W. P. H. PARKER,  
L.R.C.P. & S. (Ireland.)

The Ipswich Mental Hospital for several years has been receiving direct admissions of children. Children are admitted at almost any age. It is understandable that the efficient care of children has created many problems for this hospital.

First in importance is the care of the babies. These infants are usually sickly and needing skilled care and attention. Second in importance is the care and training of the older children who may be bedridden or ambulatory. Frequently this training must be limited to the practice of desirable social conduct.

These children have periodic checks by a psychologist from the Psychiatric Clinic in order to eliminate the possibility of some child proving to be educable. Improvised school classes have been organised for the boys and girls. Visual training plays a major role in the teaching and training generally leans towards the attainment of some vocational skill. It is hoped that it will be possible to provide the staff with greater facilities as this work has shown that a number of the uneducable children are capable of learning routine or repetitive work.

The patients have been entertained regularly with dances, pictures, band concerts and formal concerts.

The Sandy Gallop sub-branch of the R.S.S.A.I.L.A. has provided hospitality to the returned soldier patients in regular fortnightly visits to a local picture theatre. The religious interests of the patients have been catered for by regular visits and services conducted by the clergy of the various denominations.

The local branch of the C.W.A. visited the hospital at Christmas and distributed fruit, cakes, ice-cream, sweets and presents. In addition, ice-cream was supplied once a month to the children. Miss Hinton and party made available a small "merry-go-round" to entertain the children.

A Magisterial inquiry was held during the year into the circumstances surrounding a patient who was unfortunately scalded. Happily, the burns were not serious and the provision of thermometers in each bathroom in addition to the existing thermostatic valves should obviate further accidents.

#### CHARTERS TOWERS MENTAL HOSPITAL.

Construction work is still proceeding despite supply problems. The contract for fencing has been completed round the whole reserve area. In addition, the actual building area has been fenced preparatory to landscape development. Ornamental trees that have been planted are now established and are already adding beauty to the site.

The farm bailiff is carrying out a plan of pasture subdivision, and is endeavouring to secure a permanent water supply for stock.

#### EPILEPTIC HOME.

Superintendent: E. G. KENYON.

There was a total of 111 patients under treatment at the Home during the year, comprising 49 males and 62 females; of this number there were seven males and five females under 15 years of age.

Three patients died—two males and one female. Thirteen patients were admitted—six males and seven females. One of these was re-admitted after an absence of eight years. One child admitted was three years of age.

As far as possible a record of Epileptic fits is kept. Figures for the various groups during the year are as follows:—

			Male.	Female.
Grand Mal	..	..	1,588	1,846
Petit Mal	..	..	1,298	3,328
Total	..	..	2,886	5,174
Grand Total..	..	..	8,060	

The Home was established in 1917, the objects being to care for and treat epileptics in surroundings where these unfortunates may enjoy the advantage of a regular life, and, where under the necessary supervision, they may be educated or suitably employed with a view to a cure and ultimate return to active life. The presence of the institution has advantages in other directions. It relieves our public hospitals of a service which they otherwise would have to provide; and lifts a burden from many homes, where families are reduced to a state of despair through the presence of an epileptic in the home. In an ordinary household, the life of an epileptic is full of dangers, and is one of involuntary idleness which leads to mental and moral deterioration and to the serious aggravation of the disease. The epileptic should be placed under conditions where he may be free from worry and anxiety, and fully occupied; such a place is this institution.

The general health of patients during the year has been good. The teeth of all have been attended to, and a large number have had new dentures provided; others have had extractions and fillings.

The teacher in charge of the school at the home reports that at the end of June, there were 29 pupils on the roll—13 boys and 16 girls, eight of these are from the Toowoomba Mental Hospital. Average attendance for the year was 24.77. The attendance speaks volumes for the general health and well-being of the children a happy result of the constant care, attention and sympathetic environments in which these little



folk are likely to spend the greater part of their existence. Coming to the school room in eager anticipation, every day is as it were a new venture. Each one usually has some experience of an emotion or activity to relate, and are given entire freedom to do so. From this source, the teacher can note topics of interest to these children and enlarge on same.

Chronologically their ages range from five years to nearly twenty years, hence it follows that the expressions of their power cover a very wide range. They are given much latitude, but discipline of an encouraging yet firm attitude is maintained. The scope of interests extend from Kindergarten to one 6th Grade pupil—a little girl—outstanding among these children. Keen and studious, she is competent of completing neatly a given assignment, seeks and enjoys reading and has a retentive memory for general knowledge.

While some pupils are acquiring the rudiments of a general education and a degree of manual skill, only a small percentage are teachable in the scholastic sense, but may be trained to take part in some occupation in the home. Habits of neatness and hygiene are being inculcated, and every effort is being made to secure the maximum amount of progress in all subjects where it is possible. All ball games are played vigorously, folk dancing and physical education activities enjoyed.

Small group garden plots are worked and very pleasing results are shown.

Many female patients and indeed some male patients are adepts at needle work. Samples of knitting, crochet and fancy work would do credit to any expert of the art, design and colouring being faithfully carried out. One female patient is an excellent bead work designer, and another is good at sketching.

Leave is often sought and when granted, is very much appreciated by patients. During the year a large number took advantage of this privilege and spent happy holidays with relatives or friends. They return quite happy and with a feeling that at least they have not been forgotten. Periodically, a number of patients visit the city of Toowoomba and spend an enjoyable day shopping; all of these outings were without incident.

Despite the drought conditions that existed during the year, a large quantity of vegetables was produced on the farm. There is a large area to cultivate and with more labour available and a better water supply a greater quantity of produce would result. The appointment of a farm and garden overseer would be of great assistance. It is hoped to have these matters attended to in the near future. Eggs produced during the year, a large quantity of vegetables demand of the Home.

During the year Mr. A. C. Proctor took up duties as Psychologist in the Mental Hospital and Epileptic Home. The services of the psychologist have been regularly utilised in psychological investigation of patients in matters of intellectual capacity, social backwardness and employability. It is intended that ultimately all inmates including the children attending the Home School will be examined to determine their capacity for work, interests and activities,

and any latent potentialities—social or educational—which may be developed to the benefit of the patient concerned.

Recreation continues to be an important part of the life of the home. Dances are held once a week amongst the patients, and once a month a dance band attends and patients and friends spend a happy evening. Pictures are shown once a week, and are attended with great interest. Various concert parties entertained during the year. The Salvation Army Band provided programmes regularly.

Ministers from the various churches held services every Sunday.

The Visiting Medical Officer attends regularly, and his kindness and assistance to patients is very much appreciated.

#### BRISBANE PSYCHIATRIC CLINIC.

Psychologist: J. C. WINSHIP, M.A.

Since the last report was written the reconstruction of the Clinic rooms has been completed. They are often favourably commented upon by visitors which presumably must be the impression of the patients themselves.

At the beginning of the year there were several staff changes. Two officers resigned to go overseas and one officer took up an appointment at Toowoomba. The several vacancies were filled later in the year. Though we advertised for a social worker no applications from suitably trained persons were received.

As in former years the number of new patients registered showed an increase. There were fewer adults with psychiatric problems seen but the number who had previously been in one or other of the mental hospitals increased. The number of children with behaviour problems and the number with speech defects each showed a marked rise, suggesting that the facilities for handling these two types of difficulties are becoming better known. Remedial teaching at the University has enabled us to deal very effectively with those children in whom educational backwardness is either a main cause or a contributory one to their misbehaviour.

A further 57 children were registered as being mentally deficient. In addition the names of some 40 other “ineducable” children have been submitted by other agencies. Occupational Centres are being planned where these children can be given whatever education and training they might profit from within their individual limitations.

The developments that are felt to be most necessary from experience in the Clinic are—

- (1) Facilities to provide modern hospital care and treatment for voluntary patients, such as is visualized in the proposed Neuro-psychiatric Hospital at Indooroopilly; and
- (2) Facilities to care for the mentally handicapped child. In this problem the Clinic is able to advise parents as to what the problem is, as to appropriate treatment, but is not able to indicate suitable institutions or facilities where treatment could be had apart from mental hospitals.



TABLE LXXIX.  
QUEENSLAND MENTAL HOSPITALS.  
SHOWING ADMISSIONS, READMISSIONS, DISCHARGES AND DEATHS, DURING THE YEAR ENDED 30TH JUNE, 1952.

	Brisbane Mental Hospital.				Toowoomba Mental Hospital.				Ipswich Mental Hospital.				Totals.			
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	
On the Books of the Hospitals on 1st July, 1951	..	..	..	1,184	1,205	2,389	636	622	1,258	..	..	..	348	186	534	
Admitted for the first time .. ..	344	303	647	..	..	..	..	..	..	14	17	31	..	..	..	
Readmitted.. ..	70	104	174	414	407	821	76	63	139	1	..	1	414	370	784	
Transferred from Brisbane .. ..	..	..	..													
Transferred from Toowoomba .. ..	3	4	7													
Transferred from Ipswich.. ..	1	1	2	4	5	9	15	10	25	..	..	..	91	117	208	
*Total number under care during the year ..	1,602				1,617				3,219				388			
Discharged—																
Recovered .. ..	169	146	315													
Section 49 .. ..	33	51	84													
Relieved .. ..	5	10	15													
Not Improved .. ..	1	5	6													
Voluntarily left .. ..	27	13	40													
Died .. ..	103	110	213													
Total Number Discharged and Died .. ..	338				335				673				98			
Transferred to Brisbane .. ..	..	..	..													
Transferred to Toowoomba .. ..	15	10	25													
Transferred to Ipswich .. ..	25	6	31	40	16	56	3	4	7	..	..	..	1	1	2	
Total number discharged, died, &c., during year	378				351				729				36			
Remaining on Books of Hospitals on 30th June, 1952 .. ..	1,224				1,266				2,490				352			
Average Number Daily Resident .. ..	1,148				1,137				2,285				342			
Number on leave of absence on 30th June, 1952	52				90				142				1			
Proportion of Mentally Sick to each 1,000 of population as at 31st December, 1951	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Proportion of Admission per 10,000 of population for year ended 31st December, 1951	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	

\* These totals include interhospital transfers.



TABLE LXXX.  
ADMISSIONS, DISCHARGES, AND DEATHS, WITH THE PROPORTIONS OF RECOVERIES AND DEATHS PER CENT DURING  
THE YEAR ENDED 30TH JUNE, 1952.

	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Totals.		
	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.
Total Admissions .. ..	414	407	821	76	63	139	15	17	32	505	487	992
Discharged—												
Recovered .. ..	229	207	436	30	17	47	1	..	1	260	224	484
Relieved .. ..	5	13	18	24	16	40	3	1	4	32	30	62
Not Improved .. ..	1	5	6	13	4	17	3	..	3	17	9	26
Died .. ..	103	110	213	31	38	69	28	14	42	162	162	324
Average Number Daily Resident	1,148	1,137	2,285	616	611	1,227	352	193	545	2,106	1,938	4,044
Percentage of Recoveries on Admissions .. ..	55.31	50.86	53.10	39.47	27.00	33.81	6.66	0.00	3.12	51.29	45.99	48.79
Percentage of Patients Relieved on Admissions .. ..	1.21	3.19	2.19	31.58	25.40	28.77	20.00	5.88	12.50	6.33	6.16	6.25
Percentage of Deaths on Average Number Resident .. ..	8.96	9.67	9.32	5.03	6.22	5.62	7.95	7.25	7.71	7.69	8.35	8.01

TABLE LXXXI.

FORMS OF MENTAL DISORDERS IN PATIENTS ADMITTED DURING THE TWELVE MONTHS ENDED 30TH JUNE, 1952.

	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Totals.		
	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.
1. AFFECTIVE REACTION TYPES—												
(a) Manic Depressive Psychosis	18	27	45	2	5	7	..	..	..	20	32	52
(b) Acute Mania .. ..	1	4	5	5	1	6	..	..	..	6	5	11
Mania .. ..	11	21	32	1	1	2	..	..	..	12	22	34
(c) Agitated Depression .. ..	..	3	3	4	..	4	..	..	..	4	3	7
Depression .. ..	17	17	34	2	5	7	..	..	..	19	22	41
Reactive Depression .. ..	..	1	1	2	3	5	..	..	..	2	4	6
Recurrent Depression .. ..	..	3	3	..	1	1	..	..	..	..	4	4
(d) Dementia (Manic Depressive) .. ..	..	..	..	..	..	..	..	..	..	..	..	..
(e) Involuntional Depression .. ..	5	10	15	..	2	2	..	..	..	5	12	17
Involuntional Psychosis .. ..	..	..	..	..	1	1	..	..	..	..	1	1
2. SCHIZOPHRENIC REACTION TYPES—												
(a) Schizoid Personality .. ..	1	1	2	2	..	2	..	..	..	3	1	4
Schizophrenia .. ..	126	114	240	13	9	22	..	..	..	139	123	262
Schizophrenia Depression .. ..	1	..	1	..	..	..	..	..	..	1	..	1
(b) Paraphrenia .. ..	23	39	62	2	2	4	..	..	..	25	41	66
Paranoia .. ..	1	..	1	..	..	..	..	..	..	1	..	1
3. ORGANIC REACTION TYPES—												
(a) Organic Dementia .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Organic Dementia (Huntington's Chorea) .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Organic Psychosis .. ..	4	4	8	..	..	..	..	..	..	4	4	8
(b) Toxins—												
Alcoholic Acute Hallucinosiis .. ..	..	..	..	6	..	6	..	..	..	6	..	6
Alcoholic Dementia .. ..	..	1	1	..	..	..	..	..	..	..	1	1
Alcoholic Psychosis .. ..	7	2	9	1	..	1	..	..	..	8	2	10
Alcoholic Psychosis (Korsakov's) .. ..	7	1	8	..	..	..	..	..	..	7	1	8
Confusional Psychosis .. ..	2	2	4	..	1	1	..	..	..	2	3	5
Dementia Paralytica .. ..	2	2	4	..	..	..	..	..	..	2	2	4
Recurrent Tuberculosis Meningitis .. ..	..	..	..	..	..	..	1	..	1	1	..	1
(c) Degenerative Brain Changes—												
Alzheimers Disease .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Arteriosclerotic Dementia .. ..	9	5	14	2	..	2	..	..	..	11	5	16
Arteriosclerotic Psychosis .. ..	9	8	17	2	2	4	..	..	..	11	10	21
Disseminated Sclerosis .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Presenile Dementia .. ..	1	..	1	..	..	..	..	..	..	1	..	1
Presenile Psychosis .. ..	1	1	2	..	..	..	..	..	..	1	1	2
Senile Dementia .. ..	67	63	130	1	2	3	..	..	..	68	65	133
Senile Psychosis .. ..	21	19	40	5	5	10	..	..	..	26	24	50
4. EPILEPTIC REACTION TYPES—												
Epileptic Psychosis .. ..	6	15	21	1	5	6	..	..	..	7	20	27
5. PSYCHONEUROTIC REACTION TYPES—												
Psychoneurosis .. ..	7	5	12	6	5	11	..	..	..	13	10	23
Psychoneurotic Anxiety State .. ..	3	3	6	..	3	3	..	..	..	3	6	9
6. MENTAL DEFICIENCY—												
(a) Mental Deficiency .. ..	36	23	59	..	..	..	..	1	1	36	24	60
Mental Deficiency (Mongol) .. ..	1	4	5	..	2	2	2	6	8	3	12	15
Mental Deficiency (Moron) .. ..	..	2	2	1	1	2	..	..	..	1	3	4
Mental Deficiency (with Epilepsy) .. ..	5	2	7	3	2	5	..	..	..	8	4	12
Mental Deficiency (with Mania) .. ..	..	..	..	..	1	1	..	..	..	..	1	1
Mental Deficiency (with Schizophrenia) .. ..	3	..	3	..	..	..	..	..	..	3	..	3
(b) Idiocy .. ..	..	1	1	..	1	1	1	1	2	1	3	4
(c) Imbecility .. ..	..	..	..	2	2	4	11	9	20	13	11	24
(d) Moral Deficiency .. ..	..	..	..	..	..	..	..	..	..	..	..	..
(e) Backwardness .. ..	..	..	..	..	..	..	..	..	..	..	..	..
7. TRAUMATIC PSYCHOSIS—												
.. ..	1	..	1	..	..	..	..	..	..	1	..	1
8. ADDICTION—												
Alcoholism .. ..	17	2	19	13	1	14	..	..	..	30	3	33
Drugs .. ..	1	..	1	..	..	..	..	..	..	1	..	1
9. NOT DIAGNOSED .. ..	..	2	2	..	..	..	..	..	..	..	2	2
Totals .. ..	414	407	821	76	63	139	15	17	32	505	487	992



TABLE LXXXII.

CAUSES OF DEATHS WHICH OCCURRED DURING PERIOD ENDED 30TH JUNE, 1952.

	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Totals.		
	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.
GENERAL DISEASES—												
Adenocarcinoma of Neck ..	..	..	..	1	..	1	..	..	..	1	..	1
Carcinoma of Breast ..	..	..	..	..	1	1	..	..	..	..	1	1
Carcinoma of Parotid ..	..	..	..	1	..	1	..	..	..	1	..	1
Diabetes .. ..	1	1	2	..	1	1	..	..	..	1	2	3
Epithelioma of Face ..	..	..	..	1	..	1	..	..	..	1	..	1
Epithelioma of Scalp ..	..	..	..	..	1	1	..	..	..	..	1	1
Gangrene of Leg ..	1	..	1	..	..	..	..	..	..	1	..	1
Malignant Disease of Prostate Gland .. ..	..	..	..	..	..	..	1	..	1	1	..	1
Marasmus .. ..	..	..	..	..	..	..	1	2	3	1	2	3
Peritonitis .. ..	1	..	1	..	..	..	..	..	..	1	..	1
DISEASES OF NERVOUS SYSTEM—												
Acute Mania .. ..	..	1	1	..	..	..	..	..	..	..	1	1
Cerebral Arteriosclerosis ..	4	4	8	1	..	1	..	..	..	5	4	9
Cerebral Degeneration ..	5	5	10	7	2	9	..	..	..	12	7	19
Cerebral Haemorrhage ..	2	1	3	..	..	..	1	..	1	3	1	4
Cerebral Syphilis .. ..	..	..	..	..	..	..	1	..	1	1	..	1
Cerebral Thrombosis ..	6	9	15	..	1	1	..	..	..	6	10	16
Dementia Paralytica ..	2	4	6	..	..	..	..	..	..	2	4	6
Epilepsy .. ..	..	..	..	..	..	..	1	..	1	1	..	1
Exhaustion .. ..	..	1	1	..	..	..	..	..	..	..	1	1
Hemiplegia .. ..	..	..	..	..	..	..	1	..	1	1	..	1
Meningitis .. ..	..	..	..	1	..	1	..	..	..	1	..	1
Senility .. ..	11	8	19	..	..	..	..	..	..	11	8	19
Status Epilepticus .. ..	1	1	2	..	..	..	2	..	2	3	1	4
DISEASES OF CIRCULATORY SYSTEM—												
Acute Myocarditis .. ..	..	..	..	1	2	3	..	..	..	1	2	3
Acute Pericarditis .. ..	..	..	..	1	..	1	..	..	..	1	..	1
Arteriosclerosis .. ..	2	2	4	..	..	..	..	..	..	2	2	4
Cardio Vascular Degeneration	22	8	30	..	..	..	..	..	..	22	8	30
Congenital Heart Disease ..	..	..	..	..	..	..	..	2	2	..	2	2
Congestive Cardiac Failure..	6	10	16	..	..	..	..	..	..	6	10	16
Coronary Occlusion .. ..	..	..	..	1	4	5	1	..	1	2	4	6
Coronary Thrombosis ..	7	8	15	..	..	..	4	..	4	11	8	19
Left Ventricular Failure ..	3	5	8	..	..	..	..	..	..	3	5	8
Myocardial Degeneration ..	8	14	22	9	15	24	1	1	2	18	30	48
Myocarditis .. ..	..	..	..	3	1	4	4	1	5	7	2	9
DISEASES OF RESPIRATORY SYSTEM—												
Bronchiecthisis .. ..	1	..	1	..	..	..	..	..	..	1	..	1
Broncho Pneumonia ..	10	13	23	..	1	1	3	4	7	13	18	31
Lobar Pneumonia .. ..	..	4	4	..	..	..	..	..	..	..	4	4
Pneumonia .. ..	..	1	1	..	4	4	..	..	..	..	5	5
Pulmonary Abscess .. ..	1	..	1	..	..	..	..	..	..	1	..	1
Pulmonary Embolism ..	..	2	2	..	..	..	..	..	..	..	2	2
Pulmonary Tuberculosis ..	4	5	9	1	1	2	4	..	4	9	6	15
DISEASES OF ALIMENTARY SYSTEM—												
Carcinoma of Oesophagus ..	..	1	1	..	..	..	..	..	..	..	1	1
Carcinoma of Pancreas ..	..	..	..	1	1	2	..	..	..	1	1	2
Carcinoma of Prostate ..	1	..	1	..	..	..	..	..	..	1	..	1
Carcinoma of Stomach ..	..	..	..	..	1	1	..	..	..	..	1	1
Carcinoma of Tongue ..	1	..	1	..	..	..	..	..	..	1	..	1
Chronic Colitis .. ..	..	..	..	..	..	..	1	1	2	1	1	2
Chronic Ulcerative Colitis ..	..	..	..	..	1	1	..	..	..	..	1	1
Cirrhosis of Liver .. ..	..	..	..	1	..	1	..	..	..	1	..	1
Diffuse Peritonitis .. ..	..	..	..	..	..	..	1	..	1	1	..	1
Enteritis .. ..	..	..	..	..	..	..	..	2	2	..	2	2
Gastro-Enteritis .. ..	..	..	..	..	..	..	1	1	2	1	1	2
Incarcerated Inguinal Hernia	..	..	..	1	..	1	..	..	..	1	..	1
Intestinal Obstruction ..	1	..	1	..	..	..	..	..	..	1	..	1
Perforated Gastric Ulcer ..	2	..	2	..	..	..	..	..	..	2	..	2
DISEASES OF GENITO-URINARY SYSTEM—												
Carcinoma of Uterus .. ..	..	..	..	..	1	1	..	..	..	..	1	1
Uraemia .. ..	..	2	2	..	..	..	..	..	..	..	2	2
Totals .. ..	103	110	213	31	38	69	28	14	42	162	162	324



TABLE LXXXIII.

BODILY HEALTH AND CONDITION OF PATIENTS ADMITTED DURING THE YEAR ENDED 30TH JUNE, 1952.

	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Totals.		
	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.
In apparently good health and condition .. .. .	274	271	545	57	48	105	12	16	28	343	335	678
In indifferent health and reduced condition .. .. .	98	102	200	14	10	24	3	1	4	115	113	228
In bad health and exhausted condition .. .. .	42	34	76	5	5	10	..	..	..	47	39	86
Totals .. .. .	414	407	821	76	63	139	15	17	32	505	487	992

TABLE LXXXIV.

BIRTH PLACES OF PATIENTS ADMITTED DURING PERIOD ENDED 30TH JUNE, 1952.

	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Totals.		
	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.
Queensland .. .. .	230	256	486	48	53	101	15	15	30	293	324	617
New South Wales .. .. .	56	36	92	15	4	19	..	1	1	71	41	112
Victoria .. .. .	12	13	25	3	1	4	..	..	..	15	14	29
South Australia .. .. .	4	..	4	..	1	1	..	..	..	4	1	5
Western Australia .. .. .	1	1	2	..	..	..	..	..	..	1	1	2
Tasmania .. .. .	1	2	3	1	..	1	..	..	..	2	2	4
West Indies .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
New Zealand .. .. .	6	1	7	1	1	2	..	..	..	7	2	9
Albania .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Indonesia .. .. .	3	..	3	..	..	..	..	..	..	3	..	3
England .. .. .	29	34	63	3	1	4	..	..	..	32	35	67
Scotland .. .. .	9	13	22	1	1	2	..	..	..	10	14	24
Ireland .. .. .	7	11	18	..	..	..	..	..	..	7	11	18
Wales .. .. .	2	4	6	..	..	..	..	..	..	2	4	6
Malta .. .. .	..	1	1	..	..	..	..	..	..	..	1	1
Cyprus .. .. .	..	..	..	..	1	1	..	1	1	..	2	2
Latvia .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
China .. .. .	2	..	2	1	..	1	..	..	..	3	..	3
Denmark .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Finland .. .. .	1	1	2	..	..	..	..	..	..	1	1	2
France .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Germany .. .. .	6	7	13	..	..	..	..	..	..	6	7	13
Greece .. .. .	3	1	4	..	..	..	..	..	..	3	1	4
Italy .. .. .	4	4	8	..	..	..	..	..	..	4	4	8
Holland .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Poland .. .. .	6	2	8	..	..	..	..	..	..	6	2	8
Roumania .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Russia .. .. .	2	7	9	..	..	..	..	..	..	2	7	9
Sweden .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
United States of America .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Yugoslavia .. .. .	7	2	9	..	..	..	..	..	..	7	2	9
Unknown .. .. .	12	11	23	2	..	2	..	..	..	14	11	25
Totals .. .. .	414	407	821	76	63	139	15	17	32	505	487	992

TABLE LXXXV.

DISTRICTS WHENCE PATIENTS WERE RECEIVED DURING THE YEAR ENDED 30TH JUNE, 1952.

	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Totals.		
	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.	Males.	Fe-males.	Totals.
Northern and North-Western..	72	45	117	..	1	1	2	..	2	74	46	120
Central .. .. .	27	19	46	..	..	..	..	1	1	27	20	47
Southern and South-Western..	315	343	658	76	62	138	13	16	29	404	421	825
Totals .. .. .	414	407	821	76	63	139	15	17	32	505	487	992



TABLE LXXXVI.

AGE GROUPS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES, OR DEATHS OCCURRED DURING THE YEAR, AND THOSE WHO  
REMAINED IN THE HOSPITAL ON 30TH JUNE, 1952.

Age Group.	Admissions.			Discharges.						Deaths.			Remaining.		
				Recovered.			Relieved and not Improved.								
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
BRISBANE MENTAL HOSPITAL.															
Under 5 years .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5 years and under 10 years ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10 years and under 15 years ..	2	5	7	..	..	..	..	..	..	..	..	..	9	1	10
15 years and under 20 years ..	14	8	22	7	9	16	..	..	..	..	..	..	29	12	41
20 years and under 30 years ..	79	56	135	60	34	94	2	3	5	1	2	3	162	130	292
30 years and under 40 years ..	86	79	165	61	43	104	1	4	5	4	2	6	241	201	442
40 years and under 50 years ..	62	72	134	49	50	99	1	4	5	12	5	17	215	277	492
50 years and under 60 years ..	43	58	101	19	35	54	1	3	4	8	15	23	245	291	536
60 years and under 70 years ..	54	53	107	24	28	52	..	1	1	22	21	43	182	178	360
70 years and under 80 years ..	44	41	85	8	6	14	1	2	3	33	28	61	96	114	210
80 years and under 90 years ..	22	31	53	1	2	3	..	..	..	20	32	52	35	53	88
90 years and over .. ..	5	4	9	..	..	..	..	1	1	3	5	8	6	7	13
Unknown .. ..	3	..	3	..	..	..	..	..	..	..	..	..	4	2	6
Totals, Brisbane Mental Hospital .. ..	414	407	821	229	207	436	6	18	24	103	110	213	1,224	1,266	2,490
TOOWOOMBA MENTAL HOSPITAL.															
Under 5 years .. ..	..	1	1	..	..	..	..	..	..	..	..	..	..	1	1
5 years and under 10 years ..	2	..	2	..	..	..	..	..	..	..	..	..	5	3	8
10 years and under 15 years ..	..	2	2	..	..	..	1	1	2	1	..	1	2	3	5
15 years and under 20 years ..	3	6	9	1	..	1	..	..	..	..	..	..	11	9	20
20 years and under 30 years ..	12	12	24	6	3	9	5	5	10	1	..	1	37	26	63
30 years and under 40 years ..	14	7	21	5	1	6	11	5	16	..	4	4	72	59	131
40 years and under 50 years ..	16	8	24	7	3	10	10	3	13	3	2	5	125	95	220
50 years and under 60 years ..	9	7	16	7	4	11	6	2	8	1	6	7	121	147	268
60 years and under 70 years ..	7	11	18	1	3	4	3	1	4	10	9	19	150	161	311
70 years and under 80 years ..	8	7	15	1	3	4	..	2	2	7	9	16	75	77	152
80 years and under 90 years ..	3	1	4	1	..	1	1	..	1	7	7	14	22	29	51
90 years and over .. ..	2	1	3	..	..	..	..	1	1	1	1	2	3	1	4
Unknown .. ..	..	..	..	1	..	1	..	..	..	..	..	..	3	5	8
Totals Toowoomba Mental Hospital .. ..	76	63	139	30	17	47	37	20	57	31	38	69	626	616	1,242
IPSWICH MENTAL HOSPITAL.															
Under 5 years .. ..	9	13	22	..	..	..	1	..	1	4	8	12	12	15	27
5 years and under 10 years ..	4	3	7	..	..	..	3	..	3	2	2	4	25	18	43
10 years and under 15 years ..	2	1	3	..	..	..	..	..	..	1	..	1	30	15	45
15 years and under 20 years ..	..	..	..	..	..	..	..	..	..	1	..	1	11	18	29
20 years and under 30 years ..	..	..	..	..	..	..	..	1	1	..	..	..	11	12	23
30 years and under 40 years ..	..	..	..	..	..	..	1	..	1	2	1	3	22	24	46
40 years and under 50 years ..	..	..	..	1	..	1	..	..	..	2	..	2	59	23	82
50 years and under 60 years ..	..	..	..	..	..	..	..	..	..	2	..	2	70	28	98
60 years and under 70 years ..	..	..	..	..	..	..	1	..	1	8	..	8	72	24	96
70 years and under 80 years ..	..	..	..	..	..	..	..	..	..	6	1	7	28	12	40
80 years and under 90 years ..	..	..	..	..	..	..	..	..	..	..	1	1	11	4	15
90 years and over .. ..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	1
Unknown .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals, Ipswich Mental Hospital .. ..	15	17	32	1	..	1	6	1	7	28	14	42	352	193	545
Grand Totals all Hospitals .. ..	505	487	992	260	224	484	49	39	88	162	162	324	2,202	2,075	4,277



TABLE LXXXVII.

OCCUPATIONS OF PATIENTS ADMITTED DURING THE YEAR ENDED 30TH JUNE, 1952.

	Brisbane Mental Hospital.			Toowoomba Mental Hospital.			Ipswich Mental Hospital.			Totals.		
	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.	Males.	Fe- males.	Totals.
Accountant .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Apiarist .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Artist .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Baker .. .. .	3	..	3	..	..	..	..	..	..	3	..	3
Bank Manager .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Barber .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Blacksmith .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Boilermaker .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Boot Repairer .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Builder .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Butcher .. .. .	3	..	3	..	..	..	..	..	..	3	..	3
Cabinet Maker .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Cane Cutter .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Carpenter .. .. .	10	..	10	1	..	1	..	..	..	11	..	11
Carpenter, Bridge .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Carrier .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Children .. .. .	1	4	5	..	1	1	15	17	32	16	22	38
Cleaner .. .. .	2	1	3	..	..	..	..	..	..	2	1	3
Clerk .. .. .	11	10	21	..	1	1	..	..	..	11	11	22
Cook .. .. .	4	1	5	1	..	1	..	..	..	5	1	6
Domestic Duties .. .. .	..	285	285	..	10	10	..	..	..	..	295	295
Dressmaker .. .. .	..	5	5	1	..	1	..	..	..	1	5	6
Electrical Mechanic .. .. .	..	..	..	2	..	2	..	..	..	2	..	2
Engineer .. .. .	6	..	6	..	..	..	..	..	..	6	..	6
Engraver .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Factory Hand .. .. .	..	7	7	1	..	1	..	..	..	1	7	8
Farmer .. .. .	26	..	26	7	..	7	..	..	..	33	..	33
Farm Hand .. .. .	8	2	10	1	..	1	..	..	..	9	2	11
Fisherman .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Fitter .. .. .	2	..	2	1	..	1	..	..	..	3	..	3
Forestry Worker .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Gardener .. .. .	8	..	8	..	..	..	..	..	..	8	..	8
Gardener, Market .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Glass Worker .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Hotel Keeper .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Household Duties .. .. .	..	..	..	..	6	6	..	..	..	..	6	6
Housewife .. .. .	..	..	..	..	22	22	..	..	..	..	22	22
Labourer .. .. .	125	..	125	11	..	11	..	..	..	136	..	136
Leadlight Worker .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Linesman .. .. .	2	..	2	1	..	1	..	..	..	3	..	3
Machinist .. .. .	2	2	4	1	..	1	..	..	..	3	2	5
Meatworker .. .. .	3	..	3	..	..	..	..	..	..	3	..	3
Mechanic .. .. .	4	..	4	1	..	1	..	..	..	5	..	5
Medical Practitioner .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Milliner .. .. .	..	3	3	..	..	..	..	..	..	..	3	3
Miner .. .. .	12	..	12	1	..	1	..	..	..	13	..	13
Missionary .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Music Teacher .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Newsagent .. .. .	..	..	..	2	..	2	..	..	..	2	..	2
Nil .. .. .	17	9	26	9	17	26	..	..	..	26	26	52
Nurse .. .. .	1	12	13	..	..	..	..	..	..	1	12	13
Painter .. .. .	8	..	8	5	..	5	..	..	..	13	..	13
Pattern Maker .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Pensioner .. .. .	56	36	92	6	5	11	..	..	..	62	41	103
Photo Engraver .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Photographer .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Piano Tuner .. .. .	2	..	2	2	..	2	..	..	..	4	..	4
Plasterer .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Plumber .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Powder Monkey .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Railway Employee .. .. .	7	..	7	1	..	1	..	..	..	8	..	8
Salesman .. .. .	9	1	10	..	..	..	..	..	..	9	1	10
Saw Doctor .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
School Teacher .. .. .	2	6	8	1	..	1	..	..	..	3	6	9
Seaman .. .. .	3	..	3	..	..	..	..	..	..	3	..	3
Seasonal Worker .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Shearer .. .. .	5	..	5	1	..	1	..	..	..	6	..	6
Shop Assistant .. .. .	2	6	8	1	1	2	..	..	..	3	7	10
Soldier .. .. .	2	..	2	..	..	..	..	..	..	2	..	2
Station Hand .. .. .	10	..	10	1	..	1	..	..	..	11	..	11
Station Manager .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Stenographer .. .. .	..	6	6	..	..	..	..	..	..	..	6	6
Storekeeper .. .. .	3	..	3	..	..	..	..	..	..	3	..	3
Student .. .. .	5	..	5	1	..	1	..	..	..	6	..	6
Tailor .. .. .	4	..	4	..	..	..	..	..	..	4	..	4
Theatrical Employee .. .. .	..	..	..	2	..	2	..	..	..	2	..	2
Timber Cutter .. .. .	2	..	2	1	..	1	..	..	..	3	..	3
Unknown .. .. .	8	5	13	1	..	1	..	..	..	9	5	14
Waitress .. .. .	..	6	6	..	..	..	..	..	..	..	6	6
Wardsman .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Waterside Worker .. .. .	4	..	4	..	..	..	..	..	..	4	..	4
Well Borer .. .. .	1	..	1	1	..	1	..	..	..	2	..	2
Wool Presser .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Yardman .. .. .	1	..	1	..	..	..	..	..	..	1	..	1
Totals .. .. .	414	407	821	76	63	139	15	17	32	505	487	992



TABLE LXXXVIII.

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR AND OF PATIENTS WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1952.

Marital Status.	Admissions.			Discharges.						Deaths.			Remaining.		
				Recovered.			Relieved or not Improved.								
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
BRISBANE MENTAL HOSPITAL.															
Single .. .. .	252	136	388	141	61	202	2	9	11	44	21	65	946	584	1,530
Married .. .. .	131	181	312	80	121	201	4	7	11	41	33	74	211	489	700
Widowed .. .. .	28	84	112	6	22	28	..	2	2	18	53	71	37	182	219
Divorced .. .. .	1	4	5	1	3	4	..	..	..	..	2	2	11	8	19
Unknown .. .. .	2	2	4	1	..	1	..	..	..	..	1	1	19	3	22
Totals, Brisbane Mental Hospital ..	414	407	821	229	207	436	6	18	24	103	110	213	1,224	1,266	2,490
TOOWOOMBA MENTAL HOSPITAL.															
Single .. .. .	41	27	68	11	5	16	23	3	26	21	16	37	519	331	850
Married .. .. .	28	25	53	13	11	24	13	12	25	8	11	19	70	224	294
Widowed .. .. .	7	11	18	4	1	5	1	5	6	2	11	13	17	42	59
Divorced .. .. .	..	..	..	1	..	1	..	..	..	..	..	..	6	16	22
Unknown .. .. .	..	..	..	1	..	1	..	..	..	..	..	..	14	3	17
Totals, Toowoomba Mental Hospital	76	63	139	30	17	47	37	20	57	31	38	69	626	616	1,242
IPSWICH MENTAL HOSPITAL.															
Single .. .. .	15	17	32	..	..	..	5	1	6	22	13	35	292	132	424
Married .. .. .	..	..	..	1	..	1	1	..	1	4	1	5	40	41	81
Widowed .. .. .	..	..	..	..	..	..	..	..	..	1	..	1	7	10	17
Divorced .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	3	5	8
Unknown .. .. .	..	..	..	..	..	..	..	..	..	1	..	1	10	5	15
Totals, Ipswich Mental Hospital	15	17	32	1	..	1	6	1	7	28	14	42	352	193	545
Grand Totals, all Hospitals ..	505	487	992	260	224	484	49	39	88	162	162	324	2,202	2,075	4,277

TABLE LXXXIX.

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR AND OF THOSE WHO REMAINED ON THE BOOKS OF THE HOSPITAL ON 30TH JUNE, 1952.

	Discharges.						Deaths.			Remaining.		
	Recovered.			Relieved and not Improved.								
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
BRISBANE MENTAL HOSPITAL.												
Under 1 month .. .. .	26	19	45	..	2	2	17	16	33	20	34	54
1 month and under 3 months .. .. .	61	60	121	3	3	6	17	17	34	51	63	114
3 months and under 6 months .. .. .	71	64	135	2	5	7	14	20	34	81	79	160
6 months and under 9 months .. .. .	30	28	58	..	3	3	9	3	12	56	50	106
9 months and under 12 months .. .. .	17	11	28	..	1	1	8	8	16	42	58	100
1 year and under 2 years .. .. .	19	18	37	1	1	2	9	15	24	108	126	234
2 years and under 3 years .. .. .	2	3	5	..	1	1	5	13	18	86	83	169
3 years and under 5 years .. .. .	2	1	3	..	..	..	7	7	14	133	158	291
5 years and under 7 years .. .. .	..	..	..	..	..	..	1	3	4	91	118	209
7 years and under 10 years .. .. .	..	2	2	..	..	..	..	2	2	115	124	239
10 years and under 12 years .. .. .	..	1	1	..	..	..	1	..	1	67	78	145
12 years and under 15 years .. .. .	..	..	..	..	2	2	5	2	7	91	94	185
15 years and under 20 years .. .. .	1	..	1	..	..	..	3	..	3	101	91	192
20 years and over .. .. .	..	..	..	..	..	..	7	4	11	182	110	292
Totals, Brisbane Mental Hospital ..	229	207	436	6	18	24	103	110	213	1,224	1,266	2,490



TABLE LXXXIX.—continued.

	Discharges.						Deaths.			Remaining.		
	Recovered.			Relieved and not Improved.								
	Males.	Fe-males.	Total.	Males.	Fe-males.	Total.	Males.	Fe-males.	Total.	Males.	Fe-males.	Total.
TOOWOOMBA MENTAL HOSPITAL.												
Under 1 month .. .. .	13	5	18	13	10	23	4	2	6	5	6	11
1 month and under 3 months .. .. .	7	6	13	10	5	15	2	1	3	10	7	17
3 months and under 6 months .. .. .	4	..	4	3	2	5	2	..	2	16	6	22
6 months and under 9 months .. .. .	3	2	5	2	2	4	..	1	1	6	6	12
9 months and under 12 months .. .. .	1	1	2	1	1	2	1	2	3	3	5	8
1 year and under 2 years .. .. .	..	1	1	3	..	3	4	2	6	59	26	85
2 years and under 3 years .. .. .	..	..	..	2	..	2	1	3	4	43	12	55
3 years and under 5 years .. .. .	1	1	2	1	..	1	2	1	3	33	25	58
5 years and under 7 years .. .. .	..	..	..	..	..	..	3	2	5	60	34	94
7 years and under 10 years .. .. .	1	..	1	1	..	1	1	1	2	52	29	81
10 years and under 12 years .. .. .	..	..	..	..	..	..	1	1	2	39	32	71
12 years and under 15 years .. .. .	..	1	1	..	..	..	1	1	2	43	34	77
15 years and under 20 years .. .. .	..	..	..	1	..	1	2	8	10	58	96	154
20 years and Over .. .. .	..	..	..	..	..	..	7	13	20	199	298	497
Totals, Toowoomba Mental Hospital	30	17	47	37	20	57	31	38	69	626	616	1,242
IPSWICH MENTAL HOSPITAL.												
Under 1 month .. .. .	..	..	..	1	..	1	1	5	6	2	..	2
1 month and under 3 months .. .. .	..	..	..	2	..	2	1	2	3	2	..	2
3 months and under 6 months .. .. .	..	..	..	..	..	..	4	3	7	25	7	32
6 months and under 9 months .. .. .	..	..	..	1	..	1	..	..	..	2	7	9
9 months and under 12 months .. .. .	..	..	..	..	..	..	..	..	..	1	3	4
1 year and under 2 years .. .. .	..	..	..	1	..	1	..	1	1	13	11	24
2 years and under 3 years .. .. .	..	..	..	..	1	1	1	..	1	12	7	19
3 years and under 5 years .. .. .	..	..	..	..	..	..	..	..	..	18	21	39
5 years and under 7 years .. .. .	..	..	..	..	..	..	..	..	..	36	17	53
7 years and under 10 years .. .. .	..	..	..	..	..	..	4	1	5	54	43	97
10 years and under 12 years .. .. .	1	..	1	..	..	..	1	..	1	28	5	33
12 years and under 15 years .. .. .	..	..	..	1	..	1	4	..	4	36	18	54
15 years and under 20 years .. .. .	..	..	..	..	..	..	5	..	5	38	16	54
20 years and Over .. .. .	..	..	..	..	..	..	7	2	9	85	38	123
Totals, Ipswich Mental Hospital	1	..	1	6	1	7	28	14	42	352	193	545
Grand Totals, all Hospitals	260	224	484	49	39	88	162	162	324	2,202	2,075	4,277

TABLE XC.  
EXPENDITURE TABLE FOR THE TWELVE MONTHS ENDED 30TH JUNE, 1952.

—	Brisbane Mental Hospital.	Toowoomba Mental Hospital.	Ipswich Mental Hospital.	Total and Average Costs.
Average Number Daily Resident.	2,285.	1,227.	532.	4,044
Total expenditure .. .. .	£ s. d. 612,632 12 4	£ s. d. 279,842 8 10	£ s. d. 184,468 3 7	£ s. d. 1,076,943 4 9
Sales .. .. .	1,002 8 11	782 4 6	1,354 17 0	3,139 10 5
Net Expenditure .. .. .	611,630 3 5	279,060 4 4	183,113 6 7	1,073,803 14 4
				Average Costs.
Gross cost per Patient per annum .. .. .	268 2 3	228 1 4	346 14 10	266 6 1
Net cost per Patient per annum .. .. .	267 13 5	227 8 7	344 3 11	265 10 7
Gross cost per Patient per week .. .. .	5 3 1	4 7 8	6 13 4	5 2 5
Net cost per Patient per week .. .. .	5 2 11	4 7 5	6 12 9	5 2 1

TABLE XCI.  
STATEMENT SHOWING EXPENDITURE BY THE DEPARTMENT OF PUBLIC WORKS AT MENTAL HOSPITALS AND THE EPILEPTIC HOME DURING THE FINANCIAL YEAR ENDED 30TH JUNE, 1952.

Building.	Expenditure, 1951-52.		
	Revenue.	Loan.	Total.
	£ s. d.	£ s. d.	£ s. d.
Mental Hospitals—			
Brisbane (excluding expenditure at the Repatriation Hospital) .. .. .	1,756 2 9	101,676 9 3	103,432 12 0
Ipswich .. .. .	554 8 4	1,239 6 11	1,793 15 3
Toowoomba .. .. .	3,508 14 5	8,878 2 2	12,386 16 7
Charters Towers .. .. .	..	84,505 9 5	84,505 9 5
Epileptic Home—Toowoomba .. .. .	175 6 7	37 14 0	213 0 7
	5,994 12 1	196,337 1 9	202,331 13 10



DETAILS OF EXPENDITURE ON MAJOR WORKS

		Details.	Expenditure. 1951-52. £ s. d.		
Brisbane Mental Hospital	..	Irrigation of Farm .. .. .	1,516	14	4
		Access roads to new Farm Wards ..	2,414	5	0
		Grounds Improvements and Games facilities—Female Recreation Grounds	1,535	18	8
		Construction of Internal Roadways ..	8,749	17	9
		Erection of various buildings, &c., Recreation Grounds for Female patients	35,479	7	1
		Additions to Morgue .. .. .	4,220	14	5
		Erection of Ward “A”—Farm Colony ..	6,721	17	0
		Purchase of spun Cast Iron pipe ..	34,093	12	5
Toowoomba Mental Hospital	..	Reconditioning and bitumen surfacing of access roads .. .. .	5,127	12	0
		Construction of Laundryettes at various Male and Female Wards .. ..	3,542	12	4
Ipswich Mental Hospital	..	Ventilation of Recreation Hall .. ..	613	16	6
Charters Towers Mental Hospital		Fencing of Site .. .. .	2,350	8	6
		Erection of Male and Female Admission Wards .. .. .	71,954	14	5
		Provision of Water Supply .. ..	4,003	7	11
		Provision of Equipment for Admission Wards .. .. .	1,125	8	7

TABLE XCII.

POPULATION CHANGES AT EPILEPTIC HOME DURING THE YEAR 1951-52.  
PATIENTS AT 30TH JUNE, 1951: MALES 53; FEMALES 61; TOTAL 114.  
FOR YEAR ENDED 30TH JUNE, 1952.

Age.					Admitted.		Discharged.		To Ment. Hosp.		Deaths.		Remaining.		Total.
					M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 5	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1
5—10	..	..	..	..	3	1	2	..	1	..	..	..	2	1	3
10—15	..	..	..	..	..	..	..	1	..	..	..	..	7	5	12
15—20	..	..	..	..	1	1	1	..	1	2	..	..	3	6	9
20—25	..	..	..	..	..	..	..	..	..	1	..	..	8	4	12
25—30	..	..	..	..	..	2	1	..	1	..	..	..	3	7	10
30—35	..	..	..	..	..	1	..	..	..	..	1	..	6	10	16
35—40	..	..	..	..	1	1	1	..	..	..	1	..	5	8	13
40—45	..	..	..	..	..	..	..	..	..	..	..	..	4	4	8
45—50	..	..	..	..	..	..	..	..	..	1	..	..	6	6	12
50—55	..	..	..	..	..	1	..	..	..	..	..	1	..	5	5
55—60	..	..	..	..	..	..	..	..	..	..	..	..	2	2	4
60—65	..	..	..	..	..	..	..	..	..	..	..	..	2	4	6
Over 65	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	..	..	..	..	6	7	5	1	3	4	2	1	49	62	111

PATIENTS RESIDENT—

Under 5 years	..	..	..	..	..	..	48
5—10	..	..	..	..	..	..	23
10—15	..	..	..	..	..	..	17
15—20	..	..	..	..	..	..	10
Over 20	..	..	..	..	..	..	13

CAUSES OF DEATH—

Female aged 51.	Chronic Nephritis, Epilepsy, Malnutrition.
Male aged 32.	Cerebral Thrombosis, Epilepsy.
Male aged 37.	Broncho-Pneumonia, Epilepsy.

TABLE XCIII.

EXPENDITURE TABLE, EPILEPTIC HOME, FOR THE TWELVE MONTHS ENDED 30TH JUNE, 1952.  
Average Number Daily Resident—111.

		£ s. d.		
Gross Expenditure	.. .. .	24,894	18	9
Collections	.. .. .	7,695	19	10
Nett Expenditure	.. .. .	17,198	18	11
Gross cost per patient per annum	.. .. .	224	5	7
Nett cost per patient per annum	.. .. .	154	18	11
Gross cost per patient per week	.. .. .	4	6	3
Nett cost per patient per week	.. .. .	2	19	9



TABLE XCIV.

YEARLY SUMMARY OF PATIENTS TREATED AT THE PSYCHIATRIC CLINIC, CLASSIFIED IN AGE GROUPS ACCORDING TO DIAGNOSIS, 1951-52.

	0-4.		5-9.		10-14.		15-19.		20-29.		30-39.		40-49.		50-59.		60&over		Total.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Schizophrenic .. ..	..	..	..	..	..	..	3	..	3	3	3	3	1	2	..	1	..	..	10	9	19
Manic-Depressive .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1
Depressional Involutional ..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	2
Paranoic .. ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1
Organic .. ..	..	..	..	..	..	..	1	..	..	..	2	..	2	..	..	4	3	..	5	7	12
																			17	18	35
Anxiety .. ..	..	..	..	..	..	..	1	2	2	11	4	7	1	6	1	..	..	1	9	27	36
Hysteric .. ..	..	..	..	..	..	..	..	..	..	1	..	1	..	2	..	..	..	..	..	4	4
Phobic .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Obsessive Compulsive .. ..	..	..	..	..	..	..	..	..	..	2	1	1	..	..	..	..	..	3	1	4	4
Neurotic Depression .. ..	..	..	..	..	..	..	..	2	..	1	5	1	1	..	1	..	1	4	8	12	12
Other Psychoneuroses .. ..	..	..	..	..	..	..	..	..	1	1	5	1	..	..	..	..	..	2	6	8	8
Pathological Personality .. ..	..	..	..	..	6	..	6	8	4	5	3	1	5	..	1	..	..	25	14	39	39
Alcoholism .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
																			43	60	103
Epilepsy .. ..	1	..	2	..	..	..	..	..	2	1	1	..	1	1	..	..	..	7	2	9	9
Spastic .. ..	2	3	3	2	4	..	..	2	..	..	..	..	..	..	..	..	..	9	7	16	16
																			16	9	25
Behaviour Problems ..	9	3	32	20	22	13	2	1	..	..	..	..	..	..	..	..	..	65	37	102	102
Mental Deficiency ..	5	6	13	11	8	4	4	2	..	1	1	..	..	1	..	..	..	31	25	56	56
Borderline Deficiency ..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1
																			32	25	57
Educational Backwardness ..	..	..	5	1	6	..	..	..	..	..	..	..	..	..	..	..	..	11	1	12	12
Diagnostic Testing—																					
Clinic .. ..	..	..	..	..	1	..	3	1	4	..	..	2	1	..	..	1	..	9	4	13	13
At Brisbane Mental Hosp. ..	..	..	..	..	3	..	4	..	3	1	3	2	3	..	1	1	2	19	4	23	23
																			28	8	36
Not yet diagnosed, &c. ..	..	..	..	..	..	..	..	2	3	..	1	2	..	..	..	1	1	5	5	10	10
Referred by Mental Hospls. ..	..	..	..	..	..	..	..	4	7	3	11	6	6	10	5	3	4	33	33	66	66
Stammering .. ..	1	1	7	1	14	1	6	3	11	2	3	1	1	..	1	..	..	44	9	53	53
Alalia .. ..	8	3	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	9	4	13	13
Dyslalia .. ..	4	5	12	5	3	3	1	..	..	..	..	..	..	..	..	..	..	20	13	33	33
Cleft .. ..	4	4	2	2	2	..	..	..	1	..	..	1	..	..	..	..	..	9	7	16	16
Aphasia .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	1	4	..	4	4
Idioglossia .. ..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1
Laryngectomy .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	2	5	..	5	5
Partly deaf .. ..	3	1	..	2	2	1	..	..	1	..	..	..	..	..	..	..	..	5	5	10	10
Cluttering .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Aphonia .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other .. ..	..	..	2	..	..	1	..	..	..	1	1	..	1	1	..	..	..	4	3	7	7
																			101	41	142
Grand Total .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	351	237	588	588

TABLE XCV.

SHOWING ADMISSIONS, DISCHARGES AND DEATHS AT THE WACOL REPATRIATION PAVILION DURING THE YEAR ENDED 30TH JUNE, 1952.

Males.		Males.	
Total number of patients on books as at 30th June, 1951 .. ..	100	Total number of patients in residence as at 30th June, 1952 .. ..	93
Transferred from Brisbane Mental Hospital ..	24		
	124	Total number of patients on leave as at 30th June, 1951 .. ..	5
Discharged, recovered .. ..	7	Granted leave (1st July, 1951—30th June, 1952) .. ..	23
Discharged, Section 49 .. ..	1		28
Voluntary left .. ..	3		
Died .. ..	3	Discharged off leave .. ..	7
Transferred to Brisbane Mental Hospital ..	14	Died on leave .. ..	1
	28	Returned from leave .. ..	17
			25
Total number of patients on books as at 30th June, 1952 .. ..	96		
Total number of patients on leave as at 30th June, 1952 .. ..	3	Total number of patients on leave as at 30th June, 1952 .. ..	3



DIVISION OF LABORATORY SERVICES.

LABORATORY OF MICROBIOLOGY AND PATHOLOGY.

Director: J. I. TONGE, M.B., B.S. (Syd.), Dip. Clin. Path. (Syd.).  
Deputy Director: M. J. J. O'REILLY, M.B., B.S. (Syd.).  
Technical Supervisor: H. E. BROWN.

STATISTICAL SUMMARY.

LABORATORY DEVELOPMENT.

- (a) Tuberculosis Laboratory.
- (b) Clinical Pathology.
- (c) Serology.
- (d) Facilities for Washing and Sterilisation of Glassware.

SEROLOGY OF THE PYREXIAS OF UNKNOWN ORIGIN.

- (a) Leptospirosis.
- (b) The Typhus Group.
- (c) Q. fever.

"TOXOPLASMOSIS.

REGIONAL NON-BACTERIAL SUPPURATIVE LYMPHADENITIS.

THE LABORATORY DIAGNOSIS OF TUBERCULOSIS.

THE MALE TOAD TEST.

POTASSIUM BROMATE POISONING.

CITY MORGUE.

STATISTICAL SUMMARY—1951-52.

TABLE XCVI.

1. BACTERIOLOGY.

A. Specimens of Human Origin.

Specimen.	Mode of Examination.	Number.
Swabs—		
Throat .. ..	{ Culture .. ..	2,669
Nose .. ..	{ Direct Smear .. ..	33
	{ Culture .. ..	792
	{ Direct Smear .. ..	5,685
Urethra .. ..	{ Sensitivity test to	
Cervix .. ..	{ Penicillin, Aureo-	
Bartholin's Gland..	{ mycin, Chloro-	
Anus .. ..	{ mycetin, Strepto-	
	{ mycin and Terra-	9
	{ Culture .. ..	1
	{ Direct Smear .. ..	2
Contents of Cyst	{ Sensitivity test to	
Wall .. ..	{ Penicillin, Aureo-	
	{ mycin, Chloro-	
	{ mycetin, and	
	{ Streptomycin .. ..	4
Face .. ..	{ Culture .. ..	1
	{ Culture .. ..	3
	{ Direct Smear .. ..	3
	{ Sensitivity test to	
	{ Penicillin, Aureo-	
	{ mycin, Chloro-	
	{ mycetin, Strepto-	
	{ mycin and Terra-	22
	{ Culture .. ..	7
	{ Direct Smear .. ..	2
	{ Sensitivity test to	
	{ Penicillin, Aureo-	
	{ mycin, Chloro-	
	{ mycetin, Strepto-	
	{ mycin and Terra-	
Eye.. ..	{ mycin .. ..	10

TABLE XCVI.—continued.

A. Specimens of Human Origin—continued.

Specimen.	Mode of Examination.	Number.
Neck .. ..	{ Culture .. ..	1
	{ Sensitivity test to	
	{ Penicillin, Aureo-	
	{ mycin, Chloro-	4
	{ mycetin and	
	{ Streptomycin .. ..	2
	{ Culture .. ..	2
	{ Direct Smear .. ..	
	{ Sensitivity test to	
	{ Penicillin, Aureo-	
	{ mycin, Chloro-	
	{ mycetin, Strepto-	
	{ mycin and Terra-	14
	{ mycin .. ..	9
Body .. ..	{ Culture .. ..	56
	{ Culture .. ..	56
	{ Direct Smear .. ..	6
	{ Animal Inoculation	
	{ Sensitivity test to	
	{ Penicillin, Aureo-	
	{ mycin, Chloro-	
	{ mycetin, Strepto-	
	{ mycin and Terra-	171
	{ mycin .. ..	16
	{ Culture .. ..	11
	{ Microscopical .. ..	5
	{ Animal Inoculation	
	{ Sensitivity test to	
	{ Penicillin, Aureo-	
	{ mycin, Chloro-	
	{ mycetin and	
	{ Streptomycin .. ..	4
Pleural Fluid ..	{ Culture .. ..	31
	{ Microscopical .. ..	66
	{ Animal Inoculation	4
Seminal Fluid ..	{ Microscopical .. ..	5
Peritoneal Fluid ..	{ Culture .. ..	1
Ascitic Fluid ..	{ Culture .. ..	2
	{ Microscopical .. ..	3
Pericardial Fluid (P.M.)	{ Culture .. ..	1
	{ Culture .. ..	1
	{ Microscopical .. ..	1
Synovial Fluid ..	{ Animal Inoculation	1
	{ Culture .. ..	2,798
	{ Direct Smear .. ..	
	{ Dark Ground Micro-	
	{ scopy .. ..	20
Serous Exudate ..	{ Sensitivity test to	
	{ Penicillin, Aureo-	
	{ mycin, Chloro-	
	{ mycetin and	
	{ Streptomycin .. ..	4
	{ Culture .. ..	626
	{ Direct Smear .. ..	776
	{ Animal Inoculation	5
	{ Sensitivity test to	
	{ Penicillin, Aureo-	
	{ mycin, Chloro-	
	{ mycetin, Strepto-	
	{ mycin and Terra-	
	{ mycin .. ..	92
	{ Culture .. ..	25
	{ Direct Smear .. ..	4
Blood .. ..		



TABLE XCVI.—continued.  
A. Specimens of Human Origin—continued.

Specimen.	Examined for.	Number.
Urine .. .. .	Culture .. ..	378
	Microscopical ..	1,315
	Animal Inoculation	9
	Sensitivity test to Penicillin, Aureomycin, Chloromycetin, Streptomycin and Terramycin .. ..	354
Faeces .. .. .	Culture .. ..	154
	Sensitivity test to Penicillin, Aureomycin, Chloromycetin, Streptomycin and Terramycin .. ..	19
	Culture .. ..	3
	Microscopical ..	86
Nasal Washings ..	Animal Inoculation	106
	Culture .. ..	1
Gastric Contents ..	Culture .. ..	3
Bronchial Lavage ..	Direct Smear ..	3
Skin .. .. .	Culture .. ..	1
	Direct Smear ..	1
	Animal Inoculation	2
Post-mortem Swabs and Tissues ..	Culture .. ..	82
	Direct Smear ..	48
Virulence Tests for <i>Corynebacterium diphtheriae</i> ..	..	28
		17,013

B. Foods and Waters.

Specimen.	Mode of Examination.	Number.
Water .. .. .	Plate Count ..	294
	Culture .. ..	295
	Microscopical ..	32
	Plate Count ..	261
Milk .. .. .	Reductase Test ..	149
	Culture .. ..	263
	Microscopical ..	1
	Chemical .. ..	1
Ice Cream .. ..	Plate Count ..	15
	Culture .. ..	15
Pineapple Juice ..	Plate Count ..	7
	Culture .. ..	4
Apple Juice .. ..	Plate Count ..	1
	Culture .. ..	1
Carrot Juice .. ..	Plate Count ..	11
	Culture .. ..	11
Orange Segments ..	Culture .. ..	1
Canned Bananas ..	Culture .. ..	1
Yoghurt .. .. .	Culture .. ..	1
	Microscopical ..	1
Oysters .. .. .	Plate Count ..	20
	Culture .. ..	1
Molasses .. .. .	Culture .. ..	1
Onions .. .. .	Culture .. ..	10
Tinned Peas .. ..	Culture .. ..	1
Beans in Tomato Sauce	Culture .. ..	2
Canned Spiced Beef	Culture .. ..	2
Sausage .. .. .	Culture .. ..	14
White Pudding ..	Culture .. ..	3
Black Pudding ..	Culture .. ..	1
Tinned Meat .. ..	Culture .. ..	2
Pork Sausages .. ..	Culture .. ..	2
Gravy Essence .. ..	Culture .. ..	1
Gravy .. .. .	Culture .. ..	1
White Sauce .. ..	Culture .. ..	1
Meat .. .. .	Culture .. ..	2
Cauliflower .. ..	Culture .. ..	1
Potato .. .. .	Culture .. ..	1
Custard Powder ..	Culture .. ..	1
Dried Milk .. ..	Culture .. ..	1
Bread and Butter	Culture .. ..	1
	Custard .. ..	1
Bread .. .. .	Rope .. ..	13
Dough .. .. .	Rope .. ..	1
		1,448

TABLE XCVI.—continued.  
C. Various Materials.

Specimen.	Object of Examination.	Number.
Disinfectants and Antiseptics	Rideal-Walker Co-efficient .. ..	8
	Germicidal Value ..	2
	Sterility .. ..	1
	Germicidal Value ..	1
Dental Cream ..	Sterility .. ..	1
Ethamolin .. ..	Sterility .. ..	17
Bottles .. .. .	Sterility .. ..	18
	Identification ..	18
	Sensitivity test to Penicillin, Aureomycin, Chloromycetin, Streptomycin and Terramycin .. ..	28
	.. ..	28
Bacterial Cultures ..	Presence of <i>Cl. tetani</i>	1
Vaseline Gauze ..	Presence of <i>Cl. tetani</i>	1
Silk Suture .. ..	Presence of <i>Cl. tetani</i>	3
Sutures .. .. .	Presence of <i>Cl. tetani</i>	3
Bottles of Starch Powder .. ..	Presence of <i>Cl. tetani</i>	6
	Presence of <i>Cl. tetani</i>	2
Talc or Starch Powder	Presence of <i>Cl. tetani</i>	1
Distilled Water ..	Presence of <i>Cl. tetani</i>	1
Faeces .. .. .	Presence of <i>Cl. tetani</i>	1
Rust .. .. .	Presence of Iron bacteria .. ..	1
	.. ..	1
Sludge .. .. .	Presence of Iron bacteria .. ..	4
Effluent .. .. .	Presence of <i>E. Coli</i>	1
Sewerage Effluent ..	Presence of micro-organisms ..	6
Sullage Water .. ..	Presence of micro-organisms ..	1
Imported Fibre ..	Presence of micro-organisms ..	1
Cotton Linters .. ..	Presence of micro-organisms ..	1
Kapok .. .. .	Presence of micro-organisms ..	1
Mattress Bedding ..	Presence of Arthropods .. ..	1
Documents .. ..	Presence of Arthropods .. ..	1
Skin Scrapings ..	Presence of Fungi	1
	Identification ..	1
Packets of Cigarettes	Presence of Yeasts and Moulds ..	187
	Presence of Fungi	1
		299

2. SEROLOGY.

	Number.
Serum Agglutination Tests—	
<i>Eberthella typhosa</i> (O) .. ..	6
<i>Eberthella typhosa</i> (H) .. ..	1,311
<i>Salmonella paratyphi</i> (H) .. ..	1,268
<i>Salmonella schottmülleri</i> (H) .. ..	1,268
<i>Proteus</i> OX19 .. ..	1,279
<i>Proteus</i> OXK .. ..	1,277
<i>Brucella abortus</i> .. ..	1,416
<i>Leptospira pomona</i> .. ..	1,306
<i>Leptospira australis</i> A .. ..	1,306
<i>Leptospira australis</i> B .. ..	1,306
<i>Leptospira mitis</i> .. ..	1,306
<i>Leptospira icterohaemorrhagiae</i> .. ..	1,306
<i>Leptospira canicola</i> .. ..	1,241
<i>Leptospira</i> sps. .. ..	2,648
<i>Coxiella burneti</i> .. ..	1,429
Paul Bunnell Test .. ..	30
Complement Fixation Tests—	
<i>Coxiella burneti</i> .. ..	400
Typhus Fever Murine (Soluble) .. ..	200
Rickettsialpox (Soluble) .. ..	650
Lygranum C.F. .. ..	20
Eagle Wassermann (Serum)—	
Routine .. ..	3,378
Quantitative .. ..	105
Eagle Wassermann (C.S.F.) .. ..	111
Flocculation Tests—	
Kline .. ..	4,108
Kahn—	
Routine .. ..	1,075
Quantitative .. ..	22
Lange Colloidal Gold Reaction (C.S.F.) .. ..	99
Leptospiral Strains Typed (26)—	
Agglutination tests performed .. ..	600
Leptospiral Antisera prepared .. ..	41
	30,512



TABLE XCVI.—continued.  
3. BIOCHEMISTRY.

Specimen.	Examined for.	Number.
Whole Blood ..	Urea .. ..	149
	Sugar .. ..	30
	Uric acid .. ..	25
	Pigments .. ..	4
	Sodium (as Na) .. ..	1
	Chloride (as NaCl) .. ..	7
	Creatinin .. ..	1
Plasma .. ..	Chloride (as NaCl) .. ..	4
	Sodium (as Na) .. ..	2
Serum .. ..	Calcium .. ..	13
	Protein .. ..	147
	Cholesterol .. ..	44
	Bilirubin .. ..	37
	Chloride (as NaCl) .. ..	6
	Sodium (as Na) .. ..	6
	Acid phosphatase .. ..	12
	Alkaline phosphatase .. ..	34
	Inorganic phosphate .. ..	2
	Potassium .. ..	4
	Amylase .. ..	4
Cerebrospinal Fluid ..	Protein .. ..	82
	Globulin .. ..	79
	Chloride (as NaCl) .. ..	45
	Sugar .. ..	48
	Urea .. ..	21
Pleural Fluid ..	Protein .. ..	1
Urine .. ..	Albumin .. ..	1,425
	Sugar .. ..	1,426
	Acetone Bodies .. ..	3
	Pigments .. ..	9
	Chloride (as NaCl) .. ..	2
	Bilirubin .. ..	1
	Urea .. ..	1
	Diastase .. ..	2
Faeces .. ..	Total, Split and Un-split Fats .. ..	27
	Occult Blood .. ..	22
Vomitus .. ..	Bile .. ..	1
	Blood .. ..	1
Duodenal Contents ..	Trypsin .. ..	12
Renal Calculi ..	Chemical constitution .. ..	9
		3,749
Functional Tests ..	Glucose tolerance tests .. ..	183
	Urea clearance tests .. ..	108
	Urea concentration tests .. ..	128
	Fractional test meals .. ..	116
Other Tests .. ..	Thymol turbidity test .. ..	30
		565

4. HAEMATOLOGY.

—	Number.
Cell Counts—	
Red Cells (Total) .. ..	1,864
Red Cells (Stippled) .. ..	936
Reticulocytes .. ..	3
White Cells (Total) .. ..	3,132
White Cells (Differential) .. ..	2,625
Platelet Count .. ..	13
Haemoglobin Estimations .. ..	3,832
Haematocrit .. ..	1,140
Sedimentation Rate .. ..	152
Coagulation Time .. ..	40
Bleeding Time .. ..	39
Red Cell Fragility .. ..	3
Blood Grouping (A.B.O.) .. ..	1,120
Blood Typing (Rh) .. ..	1,120
	16,019

TABLE XCVI.—continued.  
5. PARASITOLOGY.

Specimen.	Object of Examination.	Number.
Faeces .. ..	Amoebae (Cysts and vegetative) .. ..	59
	Helminth ova .. ..	287
Pus .. ..	<i>Trichomonas vaginalis</i> .. ..	9
Blood .. ..	Microfilariae .. ..	5
	<i>Plasmodium</i> sps. .. ..	40
Helminth .. ..	Identification .. ..	7
Arthropod .. ..	Identification .. ..	2
		409

6. VARIOUS TESTS.

—	Number.
Aschheim Zondek Test (Pregnancy) .. ..	3
Male Toad Test (Pregnancy) .. ..	1,066
Frci Skin Test .. ..	1
	1,070

7. HISTOLOGY.

Tissues Sectioned.	Number.
Human—	
Biopsy .. ..	2,477
Post-mortem .. ..	4,128
Animal—	
Guinea-pig .. ..	4
	6,609

MEDICO-LEGAL.

Post-mortem Examinations .. ..	536
Clothing—	
Blood .. ..	55
Spermatozoa .. ..	53
Various Articles—	
Blood .. ..	31
Spermatozoa .. ..	13
Skin .. ..	5
Smears—	
Spermatozoa .. ..	1
Swabs—	
Spermatozoa .. ..	1
Blood .. ..	1
Tissue (Examination) .. ..	44
Cerebrospinal Fluid (Examination) .. ..	1
Hair (Identification) .. ..	2
Bone (Identification) .. ..	1
Blood (Identification) .. ..	1
Foetus (Identification) .. ..	1
	746

Attendances at Courts—

Supreme Court .. ..	21
Police Court .. ..	22
Coroner's Court .. ..	10
Other Courts .. ..	1

EXAMINATION OF RODENTS.

Rodents received for examination from Brisbane City Council :—

Classification—

<i>Rattus norvegicus</i> .. ..	7,654
<i>Rattus rattus</i> .. ..	543
Unclassified .. ..	2,573
<i>Mus musculus</i> .. ..	11
	10,781

Special Examinations for Plague—

Rats fully dissected .. ..	2,216
Spleen smears examined .. ..	2,216



TABLE XCVI.—*continued*.

Rat Smears received from Other Centres—					
Mackay..	..	..	..	..	288
Bundaberg	..	..	..	..	683
Maryborough	..	..	..	..	389
Gympie..	..	..	..	..	40
Ipswich..	..	..	..	..	1,697
Sandgate	..	..	..	..	771
Wynnum	..	..	..	..	724
Meatworks (Brisbane Area)	..	..	..	..	10
					4,602

No rat was found infected with *Pasteurella pestis*.

#### 10. VACCINES.

Typhoid-Paratyphoid Vaccine—390 ccs. of T.A.B. Vaccine were supplied.

#### 11. MATERIAL SUPPLIED.

One hundred and eighty-eight requisitions were supplied during the year to hospitals, private practitioners and local authorities consisting of 3,133 swabs, 3,145 McCartney bottles, 324 faeces tins, 92 C.S.F. bottles, 1,176 Wright's capsules, 243 urine bottles and 24 blood bottles.

#### LABORATORY DEVELOPMENT.

(a) *Tuberculosis Laboratory*.—A new unit for the laboratory diagnosis of tuberculosis has been established in portion of the female clinic. This unit consists of two main laboratories, one of which contains an inoculation room fitted with exhaust ventilation. A special animal autopsy room has been provided as well as accommodation for infected and normal animals. Ultra-violet light has been installed throughout.

It is hoped that the unit will be completed within the next few weeks as soon as the special incubator is installed. The laboratory has been designed to cope with forty to fifty cultures per day.

(b) *Clinical Pathology*.—During the year many of the outpatients, previously attending the Brisbane General Hospital for clinical pathological investigations have been referred to this laboratory. This has caused a marked increase, over previous years, in the number of haematological and biochemical investigations performed.

(c) *Serology*.—During the last twelve months the closest collaboration has been maintained with the Queensland Institute of Medical Research in the investigation of fevers of unknown origin occurring in North Queensland. This investigation has been quite extensive and has involved the detailed examination of a large number of sera and cultures. A deep-freeze unit has been installed so that all these sera can be stored and re-examined as required. An Assistant Research Officer has been seconded from the Queensland Institute of Medical Research to assist in this investigation.

(d) *Facilities for the Washing and Sterilisation of Glassware*.—Due to the expansion of the activities of this laboratory both in the serology and the tuberculosis sections the volume of glassware and media used has increased enormously. This has rendered the existing facilities for washing and sterilising glassware inadequate. It is essential that additional space be made available for these activities as soon as possible, as otherwise it may be necessary to curtail some of the laboratory's activities.

#### THE SEROLOGY OF THE PYREXIAS OF UNKNOWN ORIGIN.

With the establishment by the Queensland Institute of Medical Research of a Field Station at Innisfail in July, 1951, the present investigation of the pyrexias of unknown origin began. This laboratory undertook to co-operate fully with the Research Institute and to carry out the routine serological investigation of all sera and cultures sent to us from the North. For many years it has been known that many undiagnosed pyrexias were occurring in North Queensland but little could be done in the way of serious investigation of the problem unless someone were on the spot to investigate the cases as they occurred, to collect the necessary blood cultures and sera and to follow up the patients. The establishment of the Field Station has been of the utmost value and much has been learned and achieved as the result of these joint investigations during the past twelve months.

All sera submitted to the laboratory has been screened with a battery of tests. These include a Widal and Weil Felix as well as agglutination tests with *Coxiella burneti*, *Brucella abortus* and all available strains of *Leptospirae*. Gradually all these sera are also being tested by complement fixation tests with *Coxiella burneti*, rickettsialpox and Murine Typhus antigens. These complement fixation tests have been held up due to extreme difficulty that has been experienced in obtaining supplies of suitable antigens. All these sera are stored in the deep-freeze and are thus available for any further investigations that may be required.

Sera for investigation were received not only from the Field Station but from practitioners throughout the State and elsewhere in the Commonwealth. All these were submitted to the same range of tests and also preserved in the deep-freeze.

The results of the investigations will be discussed under the following headings: (a) *Leptospirosis*, (b) The Typhus Group, and (c) Q. fever. At the outset it must be realised that this investigation of the North Queensland fevers has been a combined effort with the Queensland Institute of Medical Research.

(a) *Leptospirosis*.—Important progress has been made in the investigation of this disease as it occurs in Queensland.

(i.) *L. canicola* has been recovered in culture from two patients, from Babinda and Daintree respectively. This represents the first occasion that this organism has been found in man in Australia. The cultures were classified at this laboratory and this finding was confirmed by absorption tests carried out by Dr. J. C. Broom of the Wellcome Laboratories of Tropical Medicine, London. It is significant that *L. canicola* has never been reported as occurring in dogs in this country despite several fairly extensive surveys.

(ii.) *The "Ives" Strain*.—A type of leptospira, new to Australia, has been isolated in culture from five patients living in North Queensland. It was first recovered from two brothers, Ives by name, and so the strains have been given this name temporarily until they are definitely identified and classified. The original "Ives" cultures as well as the other three strains of the "Ives" type have been forwarded to Dr. Broom. He states that the "Ives" strain



belongs to the *hebdomadis* group of leptospirae and a Dutch doctor, Wolff, is of the opinion that the original "Ives" cultures are "practically identical with *L. medanensis*." This organism was first isolated in dogs in Medan, Sumatra, and as yet no published reports of its occurrence in man have appeared although a few cases are known to have occurred.

Our investigations lead us to believe that there may not be complete uniformity in the serology of these five strains of the "Ives" type, and it is possible that they may correspond with different members of the *hebdomadis* group of leptospirae and not necessarily all be identical with *L. medanensis*. Further investigations of these strains are being made.

(iii.) *The "Celledoni" Strain*.—Yet another type of leptospirae new to Australia has been isolated in culture from two patients in North Queensland. The type has been temporarily allotted the name "Celledoni" after the first patient from whom it was recovered. This organism is not easy to grow and some difficulty was experienced in establishing it in culture. Since it soon became apparent that it was a new type for Australia the cultures were sent to Dr. Broom for identification. Broom writes, in a preliminary report on the original strain, that it fails to react with over thirty of the species of leptospirae in his collection. Its only reaction to date has been in a titre of 1/100, a small fraction of the homologous titre, with *L. javanica*, a strain recovered from cats in Indonesia. Obviously this organism requires further investigation but it appears certain that it is new to Australia and may possibly be a completely new world entity.

(iv.) *The "Robinson" Strain and the Australis B. Group*.—Of the cultures submitted to this laboratory from the Field Station twelve have been identified as belonging to the *Australis B.* type, though they appear to have minor serological differences. Individual strains do show marked variations in their agglutinability. One of these cultures, the "Robinson" strain, differs in behaviour to such a degree that it was thought that it might not belong to the true *Australis B.* type. Some patients' sera have reacted to quite high titres with the "Robinson" strain and have failed to react at all with our laboratory strain of *L. australis B.*, whilst other sera have shown equal titres with the "Robinson" strain and *L. australis B.*

These findings have led us to the opinion that it may be necessary to think of an *Australis B.* group rather than of a single entity *L. australis B.* Further investigations are being undertaken by Dr. Broom, to whom all these cultures have been sent, and it is hoped that our ideas as to the amount of variation one can expect within a single type will soon be clarified.

(v.) *The Agglutination Test as a Means of Identifying Leptospiral Strains*.—One of the important factors that has been realised as a result of the work during the past twelve months has been the limitations of the agglutination test as a means of pinpointing the type of leptospira causing an infection. In the past one has tended to make rather arbitrary decisions as to the infecting strain by picking the culture with which a patient's serum reacts in the highest titre. In the last annual report cases of leptospirosis were arbitrarily typed using this

criteria. Our experience with the sera of patients from whom the causative strain was isolated in culture, has shown us that this method of "typing" frequently leads to incorrect conclusions. Not infrequently it has been found that such sera give higher titres with heterologous strains of leptospirae and there appears to be no real consistency in the reactions. In one patient, proven by culture to be a case of leptospirosis, sera were collected for examination on the 3rd, 27th and 75th days of illness. The first two sera showed no reaction, and only in the third specimen of serum was there a reaction in a titre of 1/1,000 with its own strain and 1/1,000 with a similar strain. This case is of interest and importance in demonstrating how detectable antibodies may be delayed in formation and the diagnosis missed unless several specimens of sera, collected at varying intervals, are examined.

In other cases paired sera from cases of leptospirosis proven by culture, have only reacted in titres which in the past we have regarded as being insignificant. In some cases, however, the agglutination test does give a true indication of the type of leptospira causing the infection.

Such experience has led us to develop a healthy scepticism of the agglutination tests on patients' sera as a means of typing the strain causing an infection and one cannot be confident about making such decisions unless a culture is available for investigation.

With the introduction of the "Ives," "Celledoni" and "Robinson" strains, all sera submitted for investigation are now tested against nine strains of leptospirae. Serological "crossing" is common and not infrequently sera react with three or more of these strains in significant titres. The position might be clarified if agglutinin absorption tests were to be used but these are time consuming and require comparatively large volumes of culture. It is doubtful whether they could be usefully employed as a routine until more is known about the number, type and cross reactions of strains occurring in Australia. They may be of value in certain selected instances. If the epidemiology of the various strains is to be worked out, and it is essential that this be done, efforts must be made to obtain cultures from patients during the febrile period.

Twenty-five cultures have been investigated. These were all received from the Field Station in North Queensland and the distribution of types amongst these is as follows:—

" <i>Australis B.</i> group"	..	..	..	12
<i>L. australis A.</i>	..	..	..	2
<i>L. canicola</i>	..	..	..	2
<i>L. mitis</i> ..	..	..	..	2
"Ives" strain	..	..	..	5
"Celledoni" strain	..	..	..	2
Total	..	..	..	25

One further culture is being investigated at the present time and as yet no results are available.

All these cultures are being maintained in the laboratory and will be held until they have had their true identification checked. Antisera



either have been or are being prepared from all these cultures and the majority have been sent to London already.

During the year over 700 sera from the Field Station have been tested with all available strains, in addition to all those sera submitted from other sources. Of all the sera examined one hundred and twenty-four patients have given a titre of 1/30 or greater with one or other of the strains of leptospira.

Our knowledge of the geographical distribution of leptospirosis in Australia broadens. During the year sera have been found positive from Darwin, Cooktown and the Lockhart River area.

Formerly it was thought that leptospirosis, as it occurred in North Queensland was essentially an occupational disease occurring amongst those associated with work in the cane-fields, with, of course, an occasional infection with *L. pomona* in dairy farmers. It would now appear that this occupational association is not such a characteristic feature since the majority of cases from whom accurate records are available have had little or nothing to do with the cane-fields. Leptospirosis has occurred amongst children, aborigines, housewives, miners, timber cutters, carriers and a dental nurse, etc. This applies not only to infections with the new types of leptospiræ but also to *L. australis A* and *L. australis B*, both of which were formerly regarded as occurring typically amongst cane workers.

*Conclusions.*—Only by examination of paired sera is it possible, in most cases, to determine whether a patient is actually suffering from leptospirosis or whether he has been infected with leptospirosis in the past.

The agglutination test on patients' sera is of limited value in determining the strain of leptospira causing the infection. Every effort should be made to obtain cultures from patients as these can be identified with some certainty and only by such means will new strains be recovered. The serology of leptospirosis is complex and should be carried out only in certain centres, and a Leptospiral Reference Laboratory should be established within the Commonwealth. Such a reference laboratory could then maintain close contact with Dr. Broom at the Wellcome Laboratories in London. Only by such means will the complicated serology and nomenclature of the various strains be clarified. Attempts should be made to study the epidemiology of the various strains and this will entail a wide investigation of animals both native and domestic for reservoirs of infection. A start has already been made in such an investigation and sera from several native animals have been found to react with either the "Ives" or "Celledoni" strains. Much has been learned during the past year and already a vast amount of valuable data has been accumulated for future analysis.

(b) *The Typhus Group.*—All sera submitted for examination have been tested for their reaction with suspensions of *Proteus* OX19 and OXK. By this means it was possible to distinguish Scrub Typhus on the one hand from Murine and Tick Typhus on the other. Unfortunately some uncertainty still exists as to the percentage of cases of Queensland Tick

Typhus which give a positive reaction with *B. proteus* OX19. The results of our investigations are:

Total No. of sera tested with *B. proteus* OXK agglutination—

Human	..	..	..	..	..	1,249
Animal	..	..	..	..	..	6

Total No. of patients giving a titre of 160 or > with *B. proteus* OXK .. .. . 21

Total No. of sera tested with *B. proteus* OX19 agglutination—

Human	..	..	..	..	..	1,249
Animal	..	..	..	..	..	6

Total No. of patients giving a titre of 160 or > with *B. proteus* OX19 .. .. . 10

No further confirmatory tests are available for the diagnosis of Scrub Typhus since there is no reliable antigen for the complement fixation test. There has in the past been no means of distinguishing Murine from Queensland Tick Typhus in this laboratory since both diseases may cause a reaction with *B. proteus* OX19. For this reason it was decided to introduce complement fixation tests using both soluble Murine Typhus and soluble Rickettsialpox type antigens in an attempt to distinguish the two diseases.

Unfortunately no complement fixation test antigen for Queensland Tick Typhus is available as one would expect this to be more sensitive than the Rickettsialpox antigen. The use of this latter antigen has not been previously used for the diagnosis of Queensland Tick Typhus but it was thought worthy of trial in view of the work of Lackman (Public Health Reports, Volume 63, page 1624). Lackman found that sera from guinea-pigs infected with either Queensland Tick Typhus or Rickettsialpox reacted in equally high titres with soluble Queensland Tick Typhus antigen in the complement fixation test. So far about 500 sera have been examined by these complement fixation tests but the results await further analysis.

It is hoped in the near future to attempt to prepare a Queensland Tick Typhus antigen at the Queensland Institute of Medical Research, and when this is available all sera from suspicious cases can be retested.

*The Specificity of the Weil Felix Reaction.*—The Weil Felix Reaction is not specific and even when paired sera show a significant rise in titre with *B. proteus* OXK some caution must be exercised in interpreting this result as being necessarily diagnostic of Scrub Typhus, even in an area where this disease is prone to occur. Recently two examples of misleading results have been brought to notice and these are worthy of record.

A dairy farmer from Gladstone suffered from a pyrexia of 15 days duration with severe headache, backache and limb pains. He developed a transient rubelliform rash on the sixth day. No eschar was present and the patient was not living in a scrub typhus area. Sera were collected on the eighth and fifteenth day of illness respectively. The first specimen showed no reaction with our routine tests but the second serum reacted with *L. pomona* to a titre of 1/300 and with *B. proteus* OXK to a titre of 1/320. This man was suffering from leptospirosis, most probably of pomona type and the rise in titre in the sera from 0 to 1/320 with *B. proteus* OXK was misleading. Such false



reactions with *B. proteus* OXK in cases of leptospirosis occur occasionally and may lead to false diagnoses of Scrub Typhus especially if they occur in a typhus area.

The second example of misleading reactions with *Proteus* OXK are those occurring due to urinary infections with *B. proteus*. One case investigated recently illustrates this point well. A man from Southport had three sera submitted for examination and these were collected on the nineteenth, thirtieth and forty-fourth days respectively since the onset of a vague pyrexial illness which had no clinical resemblance to typhus. The man had not been at any time in an area where Scrub Typhus is known to occur. The titres obtained with *B. proteus* OXK were respectively 1/160, 1/320, 1/160. His urine was cultured and *Proteus morgani* was grown, an organism which was agglutinated by the patient's serum in a titre of 1/1280. Almost certainly the Weil Felix reaction was due to the urinary infection. These two possible fallacies should be borne in mind when assessing results with the Weil Felix test.

(c) *Q. fever*.—Agglutination tests with *Coxiella burneti* have been performed on all sera submitted for examination. During the year the complement fixation test has been introduced and it is hoped that all sera will be examined in this way also. The limiting factor so far has been the supply of a suitable antigen for the complement fixation test as this has had to be imported from U.S.A. To date only a limited number of sera have been examined by the complement fixation test as well as the agglutination test but already the results are of interest.

Total Number of sera tested by agglutination tests with *C. burneti*—

Human	..	..	..	..	..	1,255
Animal	..	..	..	..	..	105

Total Number patients or animals positive with agglutination test—

Human	..	..	..	..	..	43
Animal (guinea-pigs)	..	..	..	..	..	3

Total Number of sera tested by the C.F.T. for *C. burneti*—

Human	..	..	..	..	..	220
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Total Number of patients positive with C.F.T. 32

Total number of patients with positive C.F.T. (8 or >) and negative agglutination test .. .. 12

Total number of patients with positive C.F.T. (16 or > rise in titre) and negative agglutination test .. .. 7

In our hands it would appear that the complement fixation test is more sensitive than the agglutination test and cases will be missed when examined by the latter test alone.

A diagnosis of *Q. fever* has been made in the laboratory from patients living in the following localities: Mareeba, Irvinebank, Port Douglas, Little Mulgrave, Gordonvale, Julatten, Silkwood, Townsville, Bowen, Gladstone, Mackay, Gympie, Ingham, Mossman, Kingaroy, Wondai, Crows Nest, Ipswich, Toowoomba, Beenleigh and Brisbane.

*Investigation of Milk Samples for Q. fever*.—The investigation of mixed herd samples in Brisbane for the presence of *C. burneti*, commenced last year, has been continued. This work

has been carried out in conjunction with the Queensland Institute of Medical Research, the serological investigations having been made in this laboratory. The samples of milk are inoculated into guinea-pigs and the sera of these animals are subsequently submitted for agglutination tests with *C. burneti* and *Br. abortus*. One hundred and fifty sera were examined and none was found positive for *C. burneti* but eleven gave a titre of more than 1/160 with a suspension of *Br. abortus*.

#### TOXOPLASMOSIS.

Only four cases of Toxoplasmosis have been recorded as occurring in Australia and these have all been of the congenital type. One case died shortly after birth and the organisms were recognised microscopically. The other three cases were diagnosed during childhood or adult life and exhibited varying degrees of visual and mental defect with radiological evidence of scattered cerebral calcification. No case has hitherto been reported in Queensland and this together with the rarity of fatal cases of the acute acquired type of toxoplasmosis makes the following case noteworthy.

The patient was a well built girl aged 10 years who suffered from intermittent headache for one week and vomited a few times during the two days before her death. During the final twenty-four hours she became very weak and complained of some tightness in the chest. She was mentally alert throughout her illness and suddenly collapsed and died almost immediately.

At autopsy pallor of the skin and mucous membranes was noted. The brain showed superficial congestion but otherwise it and the meninges appeared quite normal. The lungs were oedematous and each pleural cavity contained about 100 m.l. of clear yellowish fluid. The spleen was slightly enlarged and was firm. There was some generalised enlargement of lymph glands, especially in the abdomen, but the stomach and intestines showed no obvious inflammatory reaction. The other organs were pale but otherwise normal.

Swabs were taken from the lumen of the small and the large intestine and *Salmonella typhimurium* was isolated. Histological examination showed significant changes in the brain, lungs, heart and lymph glands. The liver, spleen, kidney, pancreas and suprarenals appeared normal. In the brain were scattered glial nodules and associated with these were seen pseudocysts containing very numerous toxoplasma as well as smaller numbers of parasites lying within the cytoplasm of neurons. The lungs showed a patchy interstitial pneumonitis with some intra-alveolar exudate and here an occasional macrophage could be seen packed with parasites. There were numerous foci of inflammation and muscle destruction in the myocardium with infiltration by lymphocytes, plasma cells and mononuclear cells with a few polymorphs and eosinophils. The parasites were found readily in the myocardium lying within the muscle fibres themselves. The lymph glands showed a non-specific subacute inflammatory reaction and a very occasional macrophage or reticulum cell was seen to contain parasites.



# REGIONAL NON-BACTERIAL SUPPURATIVE LYMPHADENITIS AND ITS RELATIONSHIP TO "CAT-SCRATCH DISEASE".

Attention has been drawn in a previous publication (Inglis and Tonge, Medical Journal of Australia, Volume I, page 433, 1950), to a disease occurring in Queensland producing visceral granulomatous lesions which resemble lymphopathia venereum histologically. In the last two years nine cases with a peculiar regional lymphadenitis have been studied in the laboratory and these glands have all presented the same curious histological picture as that seen in the visceral granulomatous lesions previously described. These cases also present a striking similarity both in clinical behaviour and in the histological detail of the affected glands to a type of specific lymphadenitis related to "cat-scratch" fever, descriptions of which have come from U.S.A., France and England.

In this group of patients the disease has appeared as a lymphadenitis restricted usually to one group of glands, suppuration either gross or microscopic has occurred but in most cases the evolution has been more drawn out than in pyococcal adenitis. There has been no striking response to either sulphonamides or penicillin but recovery has occurred without sequelae.

Suspicion that the lymphadenitis might be acquired from cats was aroused when a patient, presenting the typical syndrome, volunteered the information that he had been scratched on the hand by a cat shortly before the development of homolateral axillary adenitis. There is further evidence to suggest that this association with cats is more than chance.

The subject is being studied closely with the collaboration of Dr. J. A. Inglis and Dr. E. H. Derriek and it is hoped to publish a preliminary report of the cases and findings in the near future.

## THE LABORATORY DIAGNOSIS OF TUBERCULOSIS.

This work has been carried out under somewhat unsatisfactory conditions during the past year whilst the new laboratory unit is being constructed. Nevertheless 781 specimens have been cultured, of which 59 per cent. were sputa, 35 per cent. gastric lavages, the remainder consisting of urines, cerebrospinal fluids, pus, etc.

An endeavour is made to culture all specimens submitted from patients suspected of having tuberculosis, and all those other than sputa are inoculated into guinea-pigs. Reliance on smears for diagnosis is not satisfactory since many positive cases will be missed unless good cultural techniques are employed. Of the sputa examined during the year 19 per cent. produced positive cultures for *M. tuberculosis* and yet were negative by smear. As a routine each specimen is inoculated onto four tubes of Lowenstein-Jensen media and the cultures are "read" each week for six weeks. Penicillin is added to the inoculum to reduce contamination.

No smears are examined from gastric lavage specimens since in these the incidence of acid-fast saprophytes can be up to 10 per cent. and thus the finding of acid-fast bacilli is of no real significance.

Techniques have been developed which will allow for forty to fifty cultures, together with all

necessary animal inoculations to be handled daily, as soon as the new laboratory unit is completed.

## MALE TOAD TEST.

During the year modifications have been made to this test with the object of increasing its sensitivity. The aim has been to concentrate the chorionic gonadotropin in the specimen of urine so that a larger effective dose could be given to the toad without increasing the total volume of fluid injected. It has been found that this can be done satisfactorily by adding urine to twice its volume of absolute alcohol and resuspending the resulting precipitate in a small volume of water. By this means it is possible to give each of two toads the equivalent of 30 mls. of urine in 3 mls. of fluid, whereas with unconcentrated urine the maximum possible dose is 10 mls. This procedure has had the effect of increasing the overall accuracy of the test from 89 per cent. to 96 per cent.

A secondary and rather unexpected result has been the virtual elimination of toxic effects. Previously a report could not be given for about 10 per cent. of urines submitted owing to a rapid death of the injected toads. Using the concentration technique, on only one occasion during the last 400 tests has death of the toads occurred.

It has been noticed recently that during cold weather the reaction time of the toads has been increased so that falsely negative results would have been recorded if a single reading at three hours had been relied on. The practice of keeping all negatively-reacting toads overnight and re-reading the following morning eliminates this possible source of error. Some investigation into this phenomenon has been planned and it is hoped that the delay can be overcome.

## POTASSIUM BROMATE POISONING.

Recently a post-mortem examination was performed on the body of a woman aged 30 years who drank in water the contents of four packets of neutraliser from home permanent waving sets corresponding to one and a quarter ounces of potassium bromate. The literature to date describes the symptoms of potassium bromate poisoning as gastro-intestinal irritation with vomiting and diarrhoea, followed later by varying grades of renal damage which may lead to death some days after the ingestion of the potassium bromate. Methaemoglobinaemia has either not been found or has been regarded as a comparatively minor toxic effect in previous reports.

Three or four hours after taking the potassium bromate this woman was admitted to hospital with vomiting, violent cramping abdominal pains and watery diarrhoea. She was in a state of collapse with a rapid weak pulse and cold moist skin but no cyanosis was noted at the time. The stomach was washed out with sodium bicarbonate solution and intravenous sodium thiosulphate was given. Death occurred five hours after admission.

At autopsy, thirteen hours after death, the outstanding finding was the brown colour of the blood which resembled coffee essence. Spectroscopic examination showed this to be due to the presence of large amounts of methaemoglobin.



The skin and organs showed similar discolouration to a lesser degree but otherwise appeared normal microscopically apart from mucosal haemorrhage in the stomach and upper portion of the small intestine. Microscopical examination showed little abnormality except for some evidence of early neuronal degeneration in the cerebral cortex and some granular degenerative changes in the myocardial fibres.

The Government Analyst found no bromide in the stomach and its contents. In heart blood bromide was present in amounts equivalent to 167 mgs. of potassium bromate per 100 mls. and in blood squeezed from the liver, spleen and kidneys the figure was 167 mgs. per 100 mls. The bladder contained about 100 mls. of clear urine and in it the equivalent of 1,000 mgs. of potassium bromate per 100 mls. was found.

#### CITY MORGUE.

The number of autopsies performed at the City Morgue continues to increase over the years.

In 1935-36 248 post-mortem examinations were made and the numbers have gradually risen to the present figure of 536. The dictating machine which was installed last year has proved of great value and has helped considerably in dealing with the increased work.

It has been felt that the value of the work carried out at the Morgue, both from a forensic and general pathological view-point, would be much enhanced if permanent photographic records could be made of important changes noted. In collaboration with Detective-Sergeant A. Martins of the Photographic Section of the C.I.B. a list of necessary apparatus was made out and approval for its purchase obtained. The majority of the order has now been delivered and it is hoped to commence operations in the near future. The basis is a Leica camera using 35 m.m. film and with some accessory apparatus this can also be used for microphotography in the Laboratory.



## GOVERNMENT CHEMICAL LABORATORY.

Government Analyst and Chief Inspector of Explosives: S. B. WATKINS, M.Sc., F.R.A.C.I.  
Deputy Government Analyst and Inspector of Explosives: A. S. HURWOOD, B.Sc., A.R.I.C.,  
A.R.A.C.I.

During the year, the total number of samples examined was 15,675 an increase of 1,538 on last year's figure. The following table details the number of samples examined for each of the preceding ten years:—

Year.	Total Samples.
1941-42 .. ..	10,401
1942-43 .. ..	10,859
1943-44 .. ..	14,105
1944-45 .. ..	15,434 (Record Year)
1945-46 .. ..	11,875
1946-47 .. ..	12,834
1947-48 .. ..	13,629
1948-49 .. ..	17,564 (Record Year)
1949-50 .. ..	18,840 (Record Year)
1950-51 .. ..	14,137

The total number of samples examined does not give a full picture of the work undertaken by the laboratory. The advice of the Government Analyst and Senior Staff members on chemical and technical problems is frequently sought by Government Departments. In this connection, during the past year, consultations on stream pollution, siting of industrial establishments, the fluoridation of water supplies, the production of oil from coal, food and drug standards, health hazards and paint and oil evaluation were held and in many cases, time consuming reports were prepared. Much outside work was occasioned consequent on the importation into the State of a considerable quantity of what proved to be seriously deteriorated explosive due to the exudation of free nitro-glycerine during storage in the Government Magazines and in those of the large mining companies. Many weeks of work were involved in surveys of stored explosive, the final outcome being the destruction of 840 cases of defective gelignite. The Government Analyst and Chief Inspector of Explosives attended a Council meeting of the National Association of Testing Authorities held in Sydney last March, and the third conference of State Chief inspectors of Explosives in Melbourne during February.

Accommodation remains an acute problem with valuable working space in the Ores section taken up with furnaces which should be housed in a separate room. Any plan to alleviate the congestion should also include the provision of a preparation room in which to set up the crushing and grinding appliances still housed in an ill-ventilated room in the Executive Building, involving frequent journeys thereto with mineral samples and back with the prepared material; also, a mechanic's workshop, additional store room space and facilities for accommodating certain mining equipment.

*Lead.*—Queensland has long been lead conscious and fully alive to the hazards to health associated with lead contamination, especially with children, and legislation has been enacted accordingly.

Limits have been set for soluble lead in paint and for various foods in which contamination might occur. Absence of lead in roofing paint and in toys is required, and contact of foods with lead or other poisonous metal is prohibited. It is interesting to note, that the British Ministry of Food, a recently established Department, has through the recommendation of its Metallic Contamination Sub Committee, issued a press statement on the proposed limits for lead in food and drinks and recommends that the use of lead piping for conveying beer, cider and other drinks be prohibited in due course; and that the use of lead arsenate sprays for horticultural purposes, of lead containing materials for packing and wrapping foods and of other possible sources of lead contamination be investigated by the appropriate authorities. Recommended limits are set down for beverages and certain scheduled foods and substances used in food preparation.

From the Industrial Health Monthly of November, 1951, comes news that Baltimore has passed regulations barring the use of paint containing lead for interior of houses, because 83 children had died of lead poisoning in the last 20 years, the total number of cases reported being 293. Investigation revealed that the children chewed under sills and ingested paint flakes. Similar legislation was introduced into Queensland in 1922.

*Chemicals in Foods.*—A great deal of attention is being given to this problem overseas. On the one hand, manufacturers are pressing for a more generous view to be taken, but official reaction to this is the demand that manufacturers should prove the harmlessness of the proposed additives. Many cases are on record where the use of a particular chemical has been followed by serious disabilities to health. Originally chemicals were added to food, mostly for gross adulteration, or were present as a result of careless procedures or for the purpose of camouflage. In 1820 under the assumed name of Accum, a German named Marcus published his "Treatise on the Adulteration of Food and Culinary Poisons". He was bitterly attacked and returned a disillusioned man to his home country. In 1848, Mitchell published a similar book but this time the alarm did not subside and in 1850 Wakely, then Editor of the *Lancet*, announced that he had formed a Sanitary Commission to look into such matters. This brought about a British Parliamentary Commission and later in 1860 the Food and Drugs Act of England. The outcome of this was the creation of public analysts for the purpose of the Act and the formation of the Society of Public Analysts. In its initial stages, the analysts were mainly concerned with gross adulterations such as lead chromate as a colouring matter, paradise



in beer, and chalk in bread. The latter is now, interestingly enough, an additive to Britain's National Loaf to give an efficient calcium intake. Then came preservatives, worth while if they were capable of extending the life of foods without detriment, but open to much abuse and often danger to health, such as the use of borax in butter, and the addition of formalin to milk. Heat sterilisation and refrigeration has changed the whole outlook of preservatives and made their use in many cases unnecessary. Modern deep refrigeration has streamlined housekeeping, so that the time has arrived when those taxed with food preparation can purchase their complete meals in cellophane wrappings.

It might be argued that with the advance in civilisation there should be less necessity to add chemicals to food, but there are problems associated with the keeping qualities of food which can in certain cases be met by the use of chemicals, such as the combating of insect ravages in stored grain. These are problems in which the chemist has a vital interest, but his outlook must not be clouded to the extent that possible harmful substances should be introduced for the purpose. The use of chemicals by the manufacturer to improve palatability and appearance is in another category. Where the desire is to improve the aesthetic value of a food, that is, dress it up in some fashionable garb to make a food do something which on its own account it cannot do, as for instance the use of chemicals to give a velvety texture to bread or an attractive colour to foods, greater care is very essential to see that the "improvers" used are absolutely harmless. Too often this has not been so, and what is more, these "improvers" in no way improve the nutritive value of the food and all too frequently mislead the consumer as to the true food value of the "improved" product.

The following statement, accepted by the Council on Food Nutrition appears in the Journal of the American Medical Association of 23rd June, 1951, "A wholesome food is a product which makes a significant contribution to human dietary requirements and which is clean and free from micro-organisms and chemical additives of such a quality or in such quantity that they may be directly injurious or result in reduced nutritional quality".

Although these basic concepts have acquired general recognition, the development recently of a large number of chemical technologic aids has emphasised the necessity for re-examining our idea of a wholesome food, particularly from the point of view of its freedom from chemical additives which may be harmful to the consumer because of toxicological effects, or because their incorporation in foods causes or makes possible the reduction of the nutritive value. The possibility of toxicity of chemical additives to food presents the problem of ascertaining the safety of an agent for daily or frequent ingestion through the life span of man, both in health and disease.

*Fluorides.*—The request for comment on the addition of fluorides to drinking water to assist in combating dental caries again roused interest in this problem. Many statements and expression of opinions have appeared in both Australian and Overseas authentic publications and from these, it is gathered that there is considerable virtue in the procedure. In "Health",

the Journal of the Commonwealth Department of Health, December, 1951, Volume 1, No. 4, is an article by Lloyd M. Carr, B.D.S., School Dental Service, Commonwealth Health Department on The Use of Fluorides to Control Dental Decay. Inter alia appears this statement—

"In the U.S.A. in 1943 the Public Health Service Drinking Standards established the permissible concentrations of fluorine in domestic water supplies at one part of fluoride to each million parts of water. During recent years there has been a tendency for public health authorities in the U.S.A. to increase this amount.

The mass use of fluorides for preventive dentistry is now an established procedure. The cost is little and the benefit is great."

It would appear that it is not a question of the value of fluorine in reducing dental decay but the procedure to be followed in controlling the addition of fluorides to water, so that the level does not exceed the accepted maximum. This requires no haphazard technique but one under careful chemical control. Nevertheless this State does not intend to recommend fluoridization of public water supplies until further long range experiments have been completed and properly evaluated.

The following table indicates the number of samples submitted for examination by the respective Government departments or otherwise:—

State—	Number Samples.
Health and Home Affairs .. ..	4,944
Police .. ..	249
Geological Survey Office .. ..	615
Mines .. ..	71
Irrigation and Water Supply .. ..	494
Portmaster (Explosives) .. ..	2,023
Local Government .. ..	248
Main Roads Commission .. ..	134
State Stores Board .. ..	317
Public Works .. ..	625
Tile Testing Station .. ..	785
Railways .. ..	21
Others .. ..	363
Commonwealth—	
Customs .. ..	2,472
Commerce and Agriculture .. ..	836
Others .. ..	157
Hospital Boards .. ..	192
Medical Profession .. ..	63
Public .. ..	1,066
	<hr/> 15,675

SECTION 1.

FOODS, DRUGS AND WATERS.

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The samples examined by the Section showed an increase of 443 on last year's figures.

Table XCVII. gives the number and source of the samples examined.

TABLE XCVII.

Department.	No. of Samples.
Health and Home Affairs .. ..	4,215
Irrigation and Water Supply .. ..	480
Other Departments .. ..	387
Local Government .. ..	151
Public .. ..	358
Total .. ..	<hr/> 5,591



TABLE XCVIII.

SUMMARY OF SAMPLES OF FOODS AND DRUGS EXAMINED FOR THE DEPARTMENT OF HEALTH AND HOME AFFAIRS.

Nature of Sample.	Number of Samples.	Passed.	Failed.
Beverage or cordial ..	129	44	85
Bread .. ..	75	41	34
Cereal .. ..	39	34	5
Condiment .. ..	11	6	5
Disinfectant .. ..	20	15	5
Drug or Medicine .. ..	63	36	27
Essence .. ..	6	1	5
Fish .. ..	11	7	4
Flock or fibre .. ..	31	20	11
Fruit or fruit juice .. ..	96	81	15
Jam or jelly .. ..	15	3	12
Meat .. ..	46	27	18
Milk—Official .. ..	2,100	1,443	657
Milk—unofficial .. ..	345	284	61
Milk product .. ..	20	13	7
Paint .. ..	95	23	72
Spirituos liquor .. ..	68	31	37
Tobacco .. ..	348	193	156
Toy .. ..	17	12	5
Vegetable .. ..	24	17	7
Miscellaneous .. ..	399	235	164
Total .. ..	3,958	2,566	1,392

The miscellaneous samples include confec-tionery, fats, oils, toilet preparations, walnuts, methylated spirit and cooking preparations.

The samples classed as failed include those not conforming with prescribed standards, and

those falsely described and incorrectly labelled. The vast majority of foods and drugs on the market conform with official requirements, and requires little attention from the Health Inspector.

The high proportion of failures recorded in Table XCIX. is due to the fact that it is largely the lines of doubtful purity that are submitted for examination.

With milk, where the sampling is more general, the figures give some indication of the state of the milk supply.

TABLE XCIX.

DETAILS OF LEGAL SAMPLES TAKEN BY INSPECTORS IN ACCORDANCE WITH THE PROVISIONS OF "THE HEALTH ACTS, 1937-1949."

Nature of Sample.	Number Examined.	Passed.	Failed.
Milk .. ..	2,100	1,443	657
Paint .. ..	71	55	16
Spirituos Liquor .. ..	27	4	23
Drug .. ..	11	11	..
" Bread and Butter " .. ..	8	1	7
Minced Meat .. ..	7	1	6
Bread .. ..	3	..	3
Fruit drink .. ..	3	..	3
Beer .. ..	3	3	..
Sausage .. ..	3	2	1
Miscellaneous .. ..	4	1	3
	2,240	1,521	719

TABLE C.  
DETAILS OF LEGAL SAMPLES OF MILK.

District.	Total Number of Samples.	Number of Samples which passed the Standard.	Number of Watered Samples.	Number of Samples below the Standard in Fat (3.3 per cent.) but not Watered.	Number of Samples below the Standard in Total Solids (12.0 per cent.) and/or Solids not Fat (8.5 per cent.) but not Watered nor Deficient in Fat.	Proportion of Watered Samples per cent.	Average Proportion of added Water, per cent.
Greater Brisbane ..	878	680	38	97	63	4.3	9.4
Bowen .. ..	18	5	..	12	1	..	..
Bundaberg .. ..	18	9	2	5	2	11.1	9.5
Cairns .. ..	112	44	34	18	16	30.4	7.7
Charleville .. ..	7	3	1	3	..	14.3	11.0
Cloncurry .. ..	16	9	1	4	2	6.2	5.0
Gympie .. ..	16	14	..	2	..	..	..
Hughenden .. ..	29	13	8	8	..	27.6	21.1
Ipswich .. ..	141	76	12	24	29	8.5	6.3
Kingaroy .. ..	14	5	5	2	2	35.7	12.4
Longreach .. ..	19	11	6	2	..	31.6	13.6
Mackay .. ..	16	12	1	3	..	6.2	6.0
Maryborough .. ..	51	32	8	3	8	15.7	17.4
Mount Morgan .. ..	17	8	1	5	3	5.9	4.0
Near North Coast..	135	77	6	30	22	4.4	3.7
Rockhampton .. ..	85	70	1	12	2	1.2	15.0
Roma .. ..	15	11	..	4	..	..	..
South Coast .. ..	269	226	2	22	19	0.7	24.5
Toowoomba .. ..	187	108	33	16	30	17.7	8.2
Townsville .. ..	57	30	9	15	3	15.8	4.5
	2,100	1,443	168	287	202	8.0	9.5

TABLE CI.  
(SUMMARY OF TABLE C).

	Percentage of total number of Samples.
Samples adulterated with water ..	8.00
Samples deficient in fat but not watered ..	13.67
Samples below the standard in total solids and/or solids not fat only ..	9.62
Samples which passed the standard ..	68.81
	100.00

TABLE CII.  
MILK SAMPLES TAKEN IN GREATER BRISBANE.

Year.	Number of Samples.	Proportion of Total Samples.	Proportion Adulterated with Water.
		Per cent.	Per cent.
1944-45 .. ..	1,666	79.4	2.9
1945-46 .. ..	1,411	66.7	1.1
1946-47 .. ..	1,358	62.7	2.2
1947-48 .. ..	1,261	55.2	1.6
1948-49 .. ..	1,221	49.3	1.7
1949-50 .. ..	1,154	53.0	1.7
1950-51 .. ..	732	43.2	6.5
1951-52 .. ..	878	41.8	4.3



TABLE CIII.  
SHOWING THE AVERAGE FAT CONTENT OF THE LEGAL SAMPLES OF MILK IN WINTER AND SUMMER IN TOWN AND COUNTRY.

Number of Samples.	Greater Brisbane or Country.				Season.				Months.				Average Fat Content.
													Per cent
2,100	..	Both	..	..	..	Overall	..	..	..	January-December	..	..	3.75
386	..	Brisbane	..	..	..	Summer	..	..	..	October-March	..	..	3.68
563	..	Country	..	..	..	ditto	..	..	..	ditto	..	..	3.60
949	..	Both	..	..	..	ditto	..	..	..	ditto	..	..	3.63
252	..	Brisbane	..	..	..	Winter	..	..	..	July-September	..	..	3.68
287	..	Country	..	..	..	ditto	..	..	..	ditto	..	..	3.56
539	..	Both	..	..	..	ditto	..	..	..	ditto	..	..	3.61
240	..	Brisbane	..	..	..	ditto	..	..	..	April-June	..	..	3.98
372	..	Country	..	..	..	ditto	..	..	..	ditto	..	..	4.05
612	..	Both	..	..	..	ditto	..	..	..	ditto	..	..	4.02

NOTE :—" Country " in this table means outside the Greater Brisbane Area.

TABLE CIV.  
MILK POSITION COMPARED WITH PREVIOUS YEARS.

Year.					Number of Legal Samples.	Percentage showing Deficiency in Fat.	Percentage Below the standard in Total Solids and/or Solids not Fat only.	Percentage of Watered Samples.	Added Water (Average amount per cent.)
1944-45	..	..	..	..	2,099	3.7	12.4	4.5	12.0
1945-46	..	..	..	..	2,116	3.2	11.7	4.0	8.0
1946-47	..	..	..	..	2,166	2.4	17.7	4.4	10.0
1947-48	..	..	..	..	2,283	1.8	7.4	2.5	10.0
1948-49	..	..	..	..	2,476	9.4	4.0	4.3	10.0
1949-50	..	..	..	..	2,179	9.6	3.5	3.1	9.0
1950-51	..	..	..	..	1,695	9.7	2.7	8.7	8.5
1951-52	..	..	..	..	2,100	13.7	9.6	8.0	9.5

Milk.

Bottled pasteurised milk, as supplied to Brisbane, was regularly examined, with, as a whole, satisfactory results. The average fat content of the four brands on the local market was 3.50, 3.71, 3.68 and 3.76 per cent. respectively, compared with the average for all milks examined of 3.75 per cent. One brand was consistently lower in fat content than the others.

One legal sample of milk contained formaldehyde at the rate of 95 parts per million and another sample was a reconstituted product from powdered milk.

A number of legal samples of milk from a country district contained hypoehlorite sufficient to decrease the acidity to an abnormally low figure, increase the ash, and depress the freezing point, masking the presence of about 5 per cent. extraneous water.

Owing to the extended use of chlorine compounds for disinfecting dairy utensils, their intentional or accidental occurrence in milk is not unlikely, although the above is the first recorded case from this laboratory.

The use of a preservative substance in milk is not permitted and the farmer should clearly understand that the use of "ehlorine water" is restricted entirely to the cleaning of the dairy utensils and that all tubes, cans and utensils in general must be well drained prior to use as milk containers.

The following observations were made from a survey of Tables C. to CIV. :—

Of the official milk samples examined, 41.8 per cent. came from the Greater Brisbane area and 58.2 per cent. from the rest of Queensland.

The proportion of milks adulterated with water was 4.3 per cent. in the Greater Brisbane area, and 10.6 per cent. in the country districts.

Most of the adulterated samples were obtained during the prolonged drought period of nearly 8 months, when the milk supply was at a low level.

From the combined districts of Townsville, Cairns, Ipswich and Toowoomba, there were 88 watered milks in the 497 samples submitted.

This high figure for adulteration does not give the true position, since it was largely the result of intensive sampling in suspected areas by the Department's health inspectors. Nevertheless, it supplies ample evidence that adulteration of milk with added water is still commonly practised, more especially in country districts, where, of necessity, official supervision and sampling is not so great as in the town centres.

There is no doubt that both the vigilance of the Health Inspector and the work of the Analyst are still as essential as ever for the maintenance of a pure milk supply.

Naturally poor milks, those low in total solids and solids not fat, were at a high level due to the poor pastoral conditions existing over the whole State for a large part of the year. A record high proportion (13.7 per cent.) of the milks was deficient in fat, due chiefly to drought conditions and partly, no doubt, to skimming.

The average fat content of all legal milks examined was 3.75 per cent. as compared with 3.9 per cent. in 1951 and 3.96 per cent. in 1950.

There was practically no difference between the average fat content of Brisbane milk and Country milk.

Bread.

Judged on the samples submitted, bread quality as a whole appeared to conform reasonably with last year's standard.



From a Townsville survey, 11 samples of white bread were submitted for examination. Eight of the samples were of fair average quality and 3 were of comparatively poor quality, the chief faults being underbaking and flour streaking in the crumb.

Due to rush methods in the bakehouse, streaking in the crumb is a common fault in bread-making to-day. The cause is usually excessive dusting with flour during the rolling and shaping of the dough, when layers of dry flour are moulded into the dough and appear as hard bands in the crumb of the finished loaf. Again, when a dough is chilled in proofing, a tough discoloured skin is formed which fails to rise normally, resulting in a tough discoloured streak in the crumb.

Of 11 samples of wholemeal and brown breads examined, 10 samples failed to attain the standard in wholemeal content.

Flour.

White flour milled in Queensland was examined regularly with satisfactory results, the protein content varying from 10.9 to 12.6 per cent.

Meat.

Samples of frankfurts were examined for comparative food value.

Meat pies were examined for meat content which varied considerably between the several brands.

Of seven legal samples of minced meat examined, 6 contained the preservative substance, sulphur dioxide, in contravention of the Regulations.

Drugs and Medicines.

Sixty-three samples of drugs and medicines were examined.

A number of medicines associated with complaints from the public was checked for accuracy of dispensing and serious errors were found in two of the samples. One medicine said to have been dispensed from a prescription for 1/100 grain to the drachm of Atropine Sulphate contained 40 times this amount of the alkaloid. The second sample said to have been dispensed from a prescription reading, "Argyrol 5 per cent." was shown to be Compound Tincture of Benzoin.

A survey of the medicinal liquid paraffins (13 brands) on the market and also the Tinctures of Iodine (11 brands) showed that these lines conformed reasonably with official requirements.

Of 8 brands of Eucalyptus Oil examined, only one brand failed to attain the prescribed standard, being high in phellandrene and low in cineol content.

A proprietary line submitted with claims many and varied—mostly extravagant and some false and misleading, was shown to be a mixture of crude molasses and honey.

Two proprietary lines of pills claiming value on their chlorophyll content for eliminating body and breath odours, were examined. They contained one-fifth and one-third grain respectively of chlorophyll-like material in each pill—little, if any, more than would be obtained from a leaf of spinach or other naturally green-coloured edible foodstuff.

"Baby Oils."—Four different brands of "baby oil" examined were perfumed mineral oils of the liquid paraffin type, free of olive oil and other saponifiable oils.

None of the brands declared the nature of the oil present.

Bread "Improvers."—Seven different brands examined had the composition shown in Table CV.

TABLE CV.  
COMPOSITION OF SOME BREAD IMPROVERS ON THE MARKET.

Sample No.	1.	2.	3.	4.	5.	6.	7.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Ammonium Chloride .. ..	11.7	11.0	14.5	..	13.0	11.0	14.7
Potassium Bromate .. ..	0.11	0.10	0.13	..	0.07	0.16	0.15
Calcium Sulphate .. ..	3.5	..	3.5	..	..	..	3.0
Acid Calcium Phosphate .. ..	..	1.0	..	0.4	..	..	..
Powdered malted cereal (difference)	84.69	87.9	81.87	99.6	86.93	88.84	82.15

"Bread and Butter" Sandwiches.—"Bread and Butter" sandwiches purchased from 15 different cafes in Brisbane were examined.

Seven of the samples were genuine bread and butter sandwiches.

In four of the samples, the butter-like spread on the bread was margarine and with the remaining four samples, the spread was a mixture of butter and margarine.

Fruit and Vegetables.—Most of the fruit and vegetables marketed were in sound, clean condition. Two lines only were condemned because of the presence of spray residues: one a cauliflower containing excessive DDT, and the other bananas contaminated with arsenic. The bananas showed black alkali-arsenic burns on the skins after removal from the ripening chamber and arsenic was also detected on the surface of the edible portion of the fruit.

Inflammable Culinary Essences.—Following a burning accident with lemon essence, in a kitchen, advice was sought on the inflammability of culinary essences in general. With vanilla essence and most of the imitation flavouring essences, there is little risk of inflammability, although vanilla essence (50 per cent. alcohol) will burn on a warm day. Essences of lemon and orange contain about 80 per cent alcohol and are definitely inflammable. Although a fire or burning hazard from such essences is not great, the housewife should know that such a hazard does exist and ordinary care should be exercised in the use of these alcoholic essences.

Potassium Bromate a Scheduled Poison.—Potassium bromate was present in a hair waving outfit for home use, the outfit containing a half ounce packet of this chemical, for use as a neutralizer in the waving process.



There were four deaths in Queensland from potassium bromate poisoning during the year, and as a consequence the Poisons Regulations were amended bringing potassium and sodium bromate, except substances containing less than 0.5 per cent. of these compounds, within the scope of Schedule III.

*Spirituuous Liquors.*—Of 27 legal samples of spirituous liquor examined—

Three samples conformed with the prescribed standard in spirit strength.

Twenty-one samples were adulterated with water in proportions varying from 0.6 to 71 per cent., the average proportion of excess water in the adulterated samples being 12.4 per cent.

Two samples were misdescribed as over-proof in strength, and one sample was draught rum contained in a proprietary line bottle.

Samples are only submitted when hydrometer tests performed by an inspector in the course of routine inspections of licensed premises indicate that a spirituous liquor is probably under strength.

*Canned Peas.*—Fourteen different brands of canned peas were examined. Those described as green peas, garden peas and spring peas were sound, attractive, good quality peas containing up to 16 milligrams per 100 grams of Vitamin C.

The samples described as processed peas were comparatively poor quality peas, unattractive in appearance and practically devoid of Vitamin C.

No artificial colouring was detected in any of the samples.

Three of the brands were misdescribed as fresh peas.

*Bedding and Upholstery Filling Material.*—Of 31 samples of flock, fibre, kapok and cotton linters examined, 11 failed to attain the standard of cleanliness required by the "Bedding and Upholstery Regulations of 1948." Four samples showed excess chlorine, two excess ammonia, 7 excess turbidity and 5 excess oxygen absorbed, a number of samples failing on more than one count.

New fibre from Ceylon was examined and gave fairly high figures for chlorine and ammonia, suggesting primitive methods of manufacture. Although there was little possibility of a health hazard associated with its use, advice was given that a close watch be kept on future deliveries and thorough sampling and examination of all such deliveries be made.

*Arsenic in Cigarettes.*—Lead arsenate is still a popular insecticide with tobacco growers.

Of 25 different brands of cigarettes examined, 22 contained arsenic in the form of lead arsenate in varying proportions. Most of the lead arsenate is left in the ash or butt of a cigarette on smoking.

*Arsenic in Fireworks.*—Despite its poisonous nature, arsenic has been used in fireworks for centuries—the sulphides to produce white stars, and copper arsenite to give blue fire.

The use of arsenic in fireworks is now prohibited in Queensland, and under the Poisons Regulations "No person shall manufacture or sell any fireworks which contain any arsenic."

Of 21 varieties of fireworks examined, only one contained arsenic, the amount being 0.6 grain to the firework.

*Miscellaneous.*—A hair dye was condemned as unfit for use because of the presence of lead compounds.

A sample of whale oil was submitted for an opinion as to quality and edibility.

A number of samples of factory effluent, creek water and dead fish from Bulimba Creek was examined in an endeavour to determine the cause of death of the fish.

Quality certificates were issued to firms covering export shipments of white flour (3), and cake mixture (8).

A sample of imported frozen unsalted cod fish contained formaldehyde at the rate of 540 parts per million.

Two samples found on Queensland beaches proved to be low grade ambergris.

Samples of highly-coloured popcorn, a popular confection with children, contained from 6 to 18 grains per pound of coal tar dye—considerably in excess of the maximum proportion permitted, namely, 2 grains per pound.

A vinegar survey showed that the various brands on the market conformed with official requirements in composition and labelling.

With a number of samples of red-coloured mohair plush, intended for use in a city theatre as seat covering, the red dye was shown to be not fast to rubbing and to perspiration.

In connection with a certain project, taint tests were carried out with butter in proximity to mineral oils.

Advice was given on soap manufacture to hospitals in Brisbane and Toowoomba, and 60 samples of soap were examined for these Institutions.

Samples of coloured plastic string were examined following a craze with school children for plaiting such string. Apart from a green coloured string containing one per cent. of lead compounds, the samples were free of harmful ingredients.

Plastic lunch wrapping was also examined and found suitable for wrapping foodstuffs.

The different brands of ground ginger were examined because of advice that some southern lines contained turmeric. All the brands on the local market were genuine and conformed with the prescribed standard for ground ginger.

A large number of doubtful quality cigarettes was examined—348 samples in all. Many were affected by mould growth, and 156 samples were condemned as unfit for sale.

Several samples submitted as honey were shown to consist principally of commercial invert sugar.



Two preparations claiming value for "destroying smells" were examined. One had little more than a pleasant deodorant value and the other had formaldehyde as its chief active ingredient.

Of 61 samples of imported passion fruit juice examined, 9 of the samples, although fairly heavily preserved with sulphur dioxide, were markedly fermented, containing on an average 8 per cent. proof spirit.

With two samples of rat poison examined, red squill was the active ingredient in one, and warfarin, a new rodenticide, the active ingredient in the other.

Samples of foods and drugs examined for Government Departments other than the Department of Health and Home Affairs numbered 146, and 56 samples were submitted direct from the public.

#### *Waters.*

The following table indicates the source of and the number of samples submitted for examination:—

Department of Health .. .. .	257
Department of Irrigation and Water Supply .. .. .	480
Department of Local Government ..	151
Other Government Departments ..	241
Public .. .. .	302
Total .. .. .	<u>1,431</u>

This total is an all time record, previous record years being 1949-50 when 1,421 samples were examined, and 1942-43 with 1,407 samples. The figure for the "Public" was much above normal, the increase being occasioned by the severe drought conditions throughout Queensland which forced people in country districts to utilise water from abnormal sources. In most cases, the examination of such waters disclosed that with appropriate treatment based upon the analytical results, they could be made potable and chemically suitable for domestic use. Advice to this effect was tendered in the certificate of examination. It should be appreciated that no water should be considered as fit for human consumption until a bacteriological and chemical examination of the sample has been carried out.

For much the same reason, the number of samples submitted by the Departments of Health and other Departments showed a considerable increase over previous years. The analytical examination of waters to assess their suitability for human consumption is more involved and requires more time than is the case with the routine followed on other water samples. Because of this, three analysts were fully occupied in the water section during the latter half of the year. The number of samples examined for the Irrigation and Water Supply Department was less than usual, not that the demand for the service had decreased but because of the enforced priority given to waters for human consumption. At present, the lag in the Irrigation and Water Supply samples is being rapidly overcome now that weather conditions have improved.

## SECTION 2.

### TOXICOLOGY, BIOCHEMISTRY AND INDUSTRIAL HYGIENE.

I. L. B. HENDERSON B.Sc., A.R.A.C.I., Officer-in-Charge.

The total number of specimens submitted for examination to this section was 1,207.

#### POLICE DEPARTMENT.

Specimens submitted by this Department during the year numbered 246, of which 168 were in connection with 51 post-mortem examinations.

Poisons found included arsenic (5), strychnine (5), cyanide (1), fluoride (1), barbiturate (6), alcohol (1), propylene dichloride (7), and potassium bromate (1).

The remaining 30 post-mortem examinations did not disclose any poison.

The first cases in Queensland of poisoning by potassium bromate occurred during the year. Until recently potassium bromate has not been readily available to the general public but its use in popular home hairwave preparations has now brought it into widespread usage. The isolation and identification of this poison from the tissues is not easy, but recent experimental work in this laboratory indicates a micro-diffusion method on the body fluids to be satisfactory.

Animal and bird poisonings involving 27 examinations were also investigated.

Other specimens examined for this Department included blood, stomach washings, drugs, medicines, anaesthetics, milk, rum and suspected poison baits.

#### BIOCHEMISTRY.

The nature, significance and number of specimens submitted by the Laboratory of Micro-Biology and Pathology, the Government Medical Officer, Hospitals and Medical Practitioners are shown in the following table:—

Nature of Specimen and Significance.	Number of Specimens.
Blood and/or Urine for alcohol, ether or other drugs.. .. .	382
Urine for lead, mercury, &c. .. .. .	206
Bone for lead .. .. .	61
Hair, nail and urine for arsenic .. .. .	92
Miscellaneous .. .. .	61
Total .. .. .	<u>802</u>

The miscellaneous specimens included blood, stomach washings, faeces, anaesthetic ether, water, foodstuffs, &c.

The number of determinations of alcohol in blood and urine has increased greatly in the period under review, the increase being due mainly to specimens submitted by the Government Medical Officer in connection with drunken driving charges.



The analyses of 61 specimens of post-mortem human bone were carried out for the Queensland Institute of Medical Research. The results of the investigation will be published at a later date.

Thirty specimens of urine from persons without known industrial lead exposure were examined for lead content. Ninety per cent. of the results fell within the range of 0.01 to 0.05 milligram per litre. The maximum value was 0.11 milligram per litre. These figures confirm previous findings that urinary lead figures up to 0.10 milligram per litre on small random specimens are of little significance in the diagnosis of lead poisoning, although it is the practice in this laboratory to investigate further, any result higher than 0.07 milligram per litre.

INDUSTRIAL HYGIENE.

Excluding biochemical specimens, the number of samples examined totalled 159, as shown in the following table:—

Dust .. .. .	112
Air and gas .. .	32
Water .. .. .	10
Miscellaneous .. .	5
	<hr/> 159

Technical assistance given the Director of Industrial Hygiene included the following:—

- (1) Dust and ventilation surveys in collieries at Box Flat No. 6, Ipswich, Dawson Valley New Pit, Baralaba, and the two open-cuts on the Callide field.
- (2) Investigation of possible dust hazards at two power-houses and a sawmill.
- (3) Two de-greasing plants using trichloroethylene as solvent were investigated and found to be operating without industrial hazard.
- (4) Samples of water taken from 10 domestic water tanks at Mount Isa showed no evidence of lead pollution.

SECTION 3.

MINING, MINERALOGY, METALLURGY AND EXPLOSIVES.

V. R. CUNDITH, B.Sc., A.R.A.C.I.,  
A.M.Aus.I.M.M.                      Officer-in-Charge.

Samples examined.—4,069.

The table shows the authority submitting work to this Section, and the number of samples from each:—

Department.	Number of Samples.
Geological Survey and Mines Department	676
Portmaster (Explosives) .. .. .	2,023
Other Departments .. .. .	1,104
Public .. .. .	266
	<hr/> 4,069

MINES DEPARTMENT AND GEOLOGICAL SURVEY.

The greater proportion of work was in assaying ores of gold, silver, copper, tin, lead, antimony, arsenic and tungsten, &c.

Some samples of ilmenite were checked for chromic oxide content. There is a demand for ilmenite provided the chromite content is sufficiently low—less than 0.1 per cent. Cr<sub>2</sub>O<sub>3</sub>—to make it suitable for the manufacture of titanium oxide paint pigment.

Most of the clays (25) examined were found to be suitable for brick and tile manufacture. In some cases, better selection from the seam or crushing to effect an even distribution of impurities would have eliminated slagging. This also applied to material used in the fire bricks received for tests at high temperature. Some failed at 1,400°C., because of deformation with flowage of iron silicate compounds.

Better selection of the clay and grinding to disperse concretionary siliceous iron oxide more evenly gave a brick which would be serviceable at 1,600°C. This extra treatment would justify an increased price for a product conforming with requirements for specified grades of firebrick for use at temperatures ranging from 1,500 to 1,700°C.

Analyses were made of the exhaust gas from a fifteen horsepower diesel locomotive, to determine the amount of contamination of the mine air caused by operation of the unit underground in a coal mine. Tests were made under varying conditions of load, and results obtained while the locomotive was moving up one of the steepest of the gradients were as follows:—

Sample.	Percentage of Gases in Air of Mine.				
	CO <sub>2</sub> (Carbon dioxide).	O <sub>2</sub> (Oxygen).	N (Nitrogen).	CO (Carbon monoxide).	Oxides of Nitrogen.
Exhaust gas taken after scrubber loco hauling ten loaded skips—Engine speed 1,150 R.P.M. .. .. .	2.7	16.1	81.2	..	..
Air in the tunnel, sampled on the return side of the loco during the abovementioned run .. .. .	..	..	..	Less than 0.002	Immeasurably small
Exhaust gas taken after scrubber loco hauling five loaded skips—Engine speed 1,500 R.P.M. .. .. .	..	..	..	0.016	..
This would be the heaviest working condition under which the loco would ever operate.					

As the carbon monoxide content of the mine air is well below the permissible of 0.01 per cent., the use of the diesel was sanctioned. This would apply to the general usage of suitably fitted diesels (in good running order) in selected places underground, provided adequate ventilation is available. Another safety factor arises with the necessity for regular maintenance of the engine.

The scrubber fluid consisted of seven gallons of a 2.9 per cent. solution of caustic soda, which was soon converted to a solution of sodium bicarbonate.

The rate of evaporation was high.

The alkalinity in terms of sodium hydroxide was reduced to 1.8 per cent. after a running period of 28 hours.



In view of this, it was recommended that the running period be limited to 50 working hours, and the liquid be "topped" to maintain volume. This would ensure an ample margin against undue loss of alkalinity by sulphation from the sulphur dioxide and sulphur trioxide formed from the sulphur in the fuel oil or interaction with nitrous fumes.

Tests made in a sewerage syphon being driven under the Brisbane River, showed the use of a diesel underground to cause no vitiation of the air supply to the workmen.

The exhaust gas was discharged by a separate pipe to the surface.

The drilling campaign being carried out by the Mines Department at Ipswich, and activities of the Coal Board, have led to an increase in the number of samples from the Geological Survey. Three hundred and twelve samples were submitted for reactivity, calorific value, agglutination and swelling index tests, proximate and ultimate analyses, fusion point of ash, and specific gravity.

The method of determining the specific gravities of crushed coal samples has been modified recently. Previously ethyl alcohol had been used as the pycnometer fluid but was not entirely satisfactory, due to its hygroscopic nature. Water alone is unsuitable as it will not wet the coal, but the addition of a small amount of a commercial wetting agent to it results in complete wetting of all the coal particles. Entrained air is easily removed by heating the (pyrex) pycnometer in a water oven, and rapid settling of the coal is obtained by the addition of a small known amount of alum.

The method gives very consistent results, and further is applicable to substances other than coal.

At the request of the Coal Board on behalf of the Victorian State Electricity Commission measurements were made of the rate of oxygen uptake of samples of Callide coal. The method adopted by Powell Duffryn Technical Services for this measurement was improved by measuring the decrease in volume of gas in the system rather than by measuring the decrease in pressure.

#### OTHER DEPARTMENTS.

The consultative and analytical services supplied by the Section have been well utilised.

Cement and concrete products, corrosion problems, soft soap, wood preservatives, cordage, solder, cork, wood wool, boiler scale, fire brick, galvanised iron, inflammable and toxic gas indicators, indicate the diversity of work.

Some attention is being directed to the durability of concrete, and samples of aggregate and cement were received for determination of reactivity in the former and alkali content in the latter.

Chemical reaction between high alkali cements (0.8 per cent. or over) and certain aggregates containing opaline or reactive silica, and certain types of volcanic glass has been found to cause failure of concrete in the more massive construction jobs.

It is likely that other characteristics of the cement also determine the physical and chemical reactions involved.

Preliminary tests on aggregate and cement are useful aids in the choice of both cement and aggregate, but the physical qualities of the mix, such as expansion, require observation extending over 1 to 2 years.

Only 3 tiles out of 785 concrete tiles examined, failed to conform with the Specification in that they were coloured with organic dye.

The oxygen and nitrous oxide used on a patient who died shortly after anaesthesia for teeth extraction, were found to conform with the requirements of the British Pharmacopoeia.

Fifty-two samples of concrete pipe and cement pipe linings were analysed for the Department of Local Government which has initiated an investigation into the action of aggressive town water supplies and means of combating erosion of mains.

#### INFLAMMABLE LIQUIDS AND GAS.

An examination of fumigation sheds used by the British Overseas Food Corporation at Bajool, Retro, Capella, Fernlees and Springsure was made in October, 1951.

Other aspects relating to the fumigation procedures, safety distances, safety precautions, handling, storage, and transport of fumigants, inflammable or otherwise, were discussed. Carbon bisulphide is generally used for the bulk fumigation of grain with minor quantities of cyanogas for mice infestations.

The remains of a banana ripening room, after an explosion therein, were inspected.

A great proportion of the work for the public is represented by examination of tankers, fuel oil tanks, wagons, and containers, to determine the presence of toxic or dangerous proportions of inflammable gas prior to entry for cleaning or repairs.

#### EXPLOSIVES.

Samples examined—2023.

The following table details the type, source and the quantity of explosives imported into Queensland for the year ended 30th June, 1952:—

Type.	Australian.	Overseas.
	Cases.	Cases.
A.N. Gelignite " 60 " .. ..	39,917	..
Polar A.N. Gelignite " 60 " .. ..	1,608	..
A.N. Gelignite " 50 " .. ..	6,350	..
Polar A.N. Gelignite " 50 " .. ..	31	..
A.N. Gelignite " 60 " Panelite		
Packed .. ..	60	..
Ajax .. ..	20,329	200
Polar Ajax .. ..	49	..
Quarry Monobel .. ..	6,338	..
40% Ligdyn S.N. .. ..	2,098	..
Dynobel No. 2 .. ..	1	..
Semigel .. ..	20	..
Monograin .. ..	964	..
Geobel No. 2 .. ..	6,870	..
Geophex .. ..	18,430	..
Blasting Powder .. ..	700	..
	103,765	200
No. 6 Detonators .. ..	1,400,000	..
Electric Detonators No. 6 x 54" .. ..	110,000	..
Electric Detonators No. 6 x 72" .. ..	994,000	560,000
Electric Detonators No. 6 x 120" .. ..	56,000	..
Electric Detonators No. 6 x 144" .. ..	52,000	..
Electric Detonators No. 6 x 240" .. ..	3,000	..
Electric Detonators No. 8 x 72" .. ..		
Submarine .. ..	3,800	..
Gasless Delay Action Detonators		
No. 6 x 144" .. ..	..	34,850
Short Delay Action Detonators		
No. 6 x 120" .. ..	..	1,200
Short Delay Action Detonators		
No. 6 x 144" .. ..	..	13,000
	Feet.	Feet.
Blue Fuse .. ..	3,873,600	..
White Fuse .. ..	14,400	..
Plastic Cordtex .. ..	..	198,000



*Condemned Explosives.*

Eight hundred and forty cases of defective explosives were destroyed during the year.

Fees were collected for the following licences issued for the storage of explosives:—

Bulk magazine	..	..	..	..	6
Retail magazine	..	..	..	..	178
Fireworks magazine	..	..	..	..	18

*Inspection of Explosives and Magazines.*

Explosives and magazines were inspected at Mount Isa, Cloncurry, Charters Towers, Townsville, Burdekin Bridge, Mackay, Rockhampton, Gladstone, Maryborough, Beerburrum, Traves-ton, Coondoo Creek, Mount Crosby, Tangalooma and Brisbane.

French explosives for Noumea were examined prior to their storage aboard a lighter at Pin-kenba pending the return of the ship after bunkering further up the river. The explosives were satisfactory.

Explosives were inspected aboard the “Lady Isobel” (Nobels Ltd. cargo ship for explosives) lying at anchor in Cleveland Bay on 27th Feb-ruary, 1952.

The vessel had been there for a month, owing to crew trouble.

An accident occurred with fireworks in which a boy received severe injuries to his hand. The boy removed the composition from a small dis-play firework and charged this into a brass tube sealed at one end with a lead pellet. The con-tents of the tube were ignited and as a result of subsequent manual manipulation the tube exploded, seriously damaging the boy’s hand. Although the composition, a coloured fire type, was one which in the normal course of dis-charging the firework burnt without exploding, the confinement resulting from the denser pack-ing in the narrow body of the tube caused the explosion. Breaking down with re-use of a fire-work composition is a contravention of the Explosive Act and Regulations but it is impos-sible to police such activities on the part of boys. However, the dangers associated with such prac-tices cannot be too strongly stressed.

In another instance, the contents of an uncovered box of fireworks were ignited by an adventitious spark, fortunately without serious consequence. Fireworks should always be kept in covered receptacles to obviate such happenings.

## SECTION 4.

## FEDERAL DEPARTMENTS, STATE STORES, MAIN ROADS, PUBLIC WORKS, &amp;C.

J. ADAMSON, A.R.A.C.I., Senior Analyst,  
Officer-in-Charge.

The total number of samples examined by this Section was 4,809. This was a slight increase on the previous year’s work.

The following table details the samples examined by the section:—

Customs	..	..	..	..	2,471
Commerce and Agriculture	..	..	..	..	836
Public Works Department	..	..	..	..	627
State Stores Board	..	..	..	..	316
Explosives (Fireworks)	..	..	..	..	389
Main Roads Commission	..	..	..	..	121
Railways	..	..	..	..	18
Public	..	..	..	..	31

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4,809

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The bulk of the work of this section is carried out for the Federal Customs and the Depart-ment of Commerce and Agriculture, together with a small number of samples for the Royal Australian Navy.

The work for the Customs Department is mainly concerned with classification for duty purposes, but some work is carried out for the Excise Department. Examinations are also made of seizures by members of the Boarding Staff with a view to determining the presence or otherwise of dangerous drugs such as opium or cocaine.

The work for the Department of Commerce and Agriculture is concerned with the mainten-ance of export standards of agricultural products.

The number of paints submitted by the Public Works Department again showed an increase over the previous year. The paints were gener-ally of a good quality and the number of paints containing soluble lead pigments was pleasingly low. Some of the paints submitted, contained an unduly high proportion of inferior pigments—such as barium sulphate, clay and calcium car-bonate. An excessive amount of mineral tur-pentine was used by some painters. Whilst the addition of this thinner renders painting easy, it does not improve the lasting qualities of the paint.

The State Stores Board submitted its usual range of works—textile, inks, disinfectants, paper, mattresses, &c.

The Main Roads Commission submitted a number of samples of bitumin and bitumin emulsions.

The examination of imported fireworks was again carried out by this Section, and with the exception of several small consignments of “arsenical” fireworks, their condition was satisfactory.



## SECTION OF SOCIAL SERVICES.

Welfare Officer: Mrs. V. WILLS.

The work of this Section covers many activities, such as the regular weekly inspection of the ten temporary housing areas. These areas have shown an improvement but there is still apathy in some instances and constant vigilance is necessary to ensure a proper standard of hygiene.

During these inspections it has often been observed that medical attention is needed, both by adults and children. These people have been advised to seek medical care, and in some cases the Welfare Officer has made the necessary appointments and arranged transport for them.

Complaints regarding State Rental Houses have also been investigated and the necessity for hygiene has been impressed on the tenants.

Appointments have been made at the Brisbane Dental Hospital, and pensioners have been conveyed to the Out-patient Department of the Brisbane General Hospital. Appointments have also been made for persons needing psychiatric treatment, and voluntary and private cases have been taken to the Brisbane Mental Hospital. Patients have also been conveyed for shock treatment to the Brisbane Hospital.

Another feature of the Section's work has been assistance to unmarried mothers. Arrangements have been made where desired for the adoption of the child, assistance has been given in respect of accommodation and, if necessary, employment has been found for the mother and care for the child whilst the mother is at work.

Complaints regarding neglected children and children not attending school have been investigated and have been referred to the State Children Department where necessary. These complaints have been quickly rectified.

The State Housing Commission has again been most sympathetic in finding accommodation for families in urgent need, whose plight has been brought to their notice by the Welfare Officer.

Domestic help has been obtained for families while the parents are ill, and assistance has been given to expectant mothers in their attendance at ante-natal clinics, and in respect to the medical examination of other children of the family at the Maternal and Child Welfare clinics. Admission of children to the Maternal and Child Welfare Homes during the mothers' confinements has also been arranged.

Assistance has again been given in regard to Commonwealth Social Services Pensions; help has been afforded in the filling in of applications for invalid, age, and Widows' pensions, and child endowment allowances. The Welfare Officer has been instrumental in obtaining aid through the Social Services for persons in straitened circumstances pending approval of their respective pensions.

Liaison has been maintained with H.M. Prison and every effort has been made to rehabilitate female prisoners on their discharge. Dental treatment has been arranged for these prisoners also where it has been needed.

During the gastro-enteritis outbreak the Welfare Officer has co-operated with the Queensland Institute of Medical Research in the collection and delivery of specimens for examination. With a view to the maintenance of hygiene, ladies' public conveniences in picture theatres, emporiums and parks have been regularly inspected.

There has also been co-operation with the Section of Venereal Diseases in assisting to locate female contacts of notified cases.

## LEGISLATION.

The only legislation enacted during the year was the amendment of "The Poisons Regulations of 1947" on 11th October, 1951, and again on 12th June, 1952. In October, 1951, the proviso was added to clause 3 of Regulation 5 that in respect of any prescription issued under "The Pharmaceutical Benefits Act, 1947-50, or "The National Health Service Act, 1948-49" of the Commonwealth, the duplicate of such prescription instead of the original shall be cancelled in accordance with the foregoing provisions of the Regulation. Provisoes were added to Regulation 46 that in respect of any prescription for a dangerous drug under the above Acts of the Commonwealth the duplicate of such prescription shall be and be deemed to be a prescription for the purposes of this Regulation, and, further, that where the only dangerous drug content of any prescription consists of less than 0.1 per cent. of diamorphine (diacetylmorphine) or its salts such prescription shall be exempt from the provisions of this Regulation.

Schedule I. (Poisons) and Schedule IV. (Restricted Drugs) were amended by the removal of 4,4'-diamine diphenyl sulphone, derivatives of; and 6-morpholino-4: 4-diphenylheptane-3-one-hydrochloride (known as C.B.11), and Schedule V. (Dangerous Drugs) was amended by the removal of codeine and its salts, except substances containing less than one per cent. of codeine.

The following substances were added to Schedule I., viz. 3-( $\alpha$ -acetylbenzyl)-4-hydroxycoumarin (Warfarin), Diethylparanitrophenylthiophosphate and its derivatives, Dimethylparanitrophenylthiophosphate and its derivatives, Hexaethyltetraphosphate, Tetraethylpyrophosphate, and Di-isopropylfluorophosphonate. Adrenocorticotrophic hormone (A.C.T.H.), Codeine and its salts, except substances containing less than one per cent. of codeine, Cortisone, 4,4'-diamino diphenyl sulphone and its derivatives, Oxazolidine-2, 4-dione



and its derivatives, and Thiosemicarbazones were added to Schedule I. and to Schedule IV., whilst the following substances were added to Schedule V.:—

Acetyldihydrocodeine and its salts.

Alphaprodine ( $\alpha$ -4-Propionoxy-4-phenyl-1:3-dimethyl-4-piperidine) and its salts.

Betaprodine ( $\rho$ -4-Propionoxy-4-phenyl-1:3-dimethyl-4-piperidine) and its salts.

Dihydrocodeine and its salts.

Hydroxypethidine (Ethyl 4-m-hydroxy-phenyl-1-methyl piperidine-4-carboxylate) and its salts.

Isoamidone (6 - Dimethylamino - 4:4-diphenyl-5-methyl-hexan-3-one) and its salts.

Ketobemidone (4-Propionyl-4-m-hydroxy-phenyl-1-methyl-piperidine) and its salts.  
Methadol (6-Dimethylamino-4:4-diphenyl-heptan-3-ol) and its salts.

Phenadoxone (6-Morpholino-4:4-diphenyl-heptan-3-one) and its salts.

4-Propionoxy - 4 - phenyl-1-methyl-3-ethyl-piperidine and its salts.

Methorphan (3-Hydroxy-N-methyl-morphinan) and its salts.

Methadyl acetate (6-Dimethylamino-4:4-diphenyl-3-heptyl acetate) and its salts.

By the amendment of 12th June, 1952, Isonicotinyl Hydrazine and its derivatives, and Para-amino-salicylic acid and its salts, were added to Schedule I. (Poisons) and to Schedule IV. (Restricted Drugs).

#### ACKNOWLEDGMENTS.

I desire to express my thanks to all members of the staff for their unfailing and conscientious attention to duty. Thanks are also given to Government Departments, particularly to the Government Statistician (Mr. S. E. Solomon) for his assistance in preparing the vital statistics section of this Report and in supplying other statistical details sought from time to time throughout the year, and to the Department of Public Works for their ready co-operation in complying with requests made to them.

Special thanks are also due to the Director-General of Public Health of New South Wales, the Chief Health Officer, Victoria, and the Director of Public Health, Tasmania, for the

courtesy extended to Medical Superintendents of the Brisbane and Toowoomba Mental Hospitals and the facilities made available to them. These inspections were of great value to the officers concerned.

The Queensland Health Education Council has, as in the past, been most co-operative and the work which is being done by that body is a big factor in the control of disease in this State.

ABRAHAM FRYBERG,

M.B., B.S. (Melb.), D.P.H., D.T.M. (Syd.),  
Director-General of Health and Medical Services.



## APPENDIX A.

## REPORT OF THE NATIONAL MOSQUITO CONTROL COMMITTEE.

The main work of the Committee during the period has been concerned with field surveys and collections of mosquitoes. The information, field notes and material collected will be utilised in the preparation of a series of publications on mosquitoes and mosquito borne diseases. These publications will be of the greatest assistance in the future to all officers and research workers associated with mosquito control problems and consequently will be a great benefit to the community.

The Committee's Graduate Research Assistant, Dr. E. N. Marks, returned from leave of absence in England and resumed duty in November, 1951. In January-February, 1952, she spent five weeks at Mildura working with a team from the Walter and Eliza Hall Institute, Melbourne. In April, Dr. Marks and two temporary assistants, Misses A. Exley and H. Gillies, worked for four weeks at Townsville with a team from the Queensland Institute of Medical Research. Each of these field teams collected and identified over 40,000 adult mosquitoes which were sent to their respective institutes to be tested for the virus of Murray Valley Encephalitis.

Subsequently, Dr. Marks spent several weeks in different localities in North Queensland, obtaining information on the distribution, habits and life histories of mosquitoes in that area. These collections have still to be studied in detail in the laboratory. In June, she was sent to the Torres Strait area to help investigate an outbreak of malaria on Murray and Darnley Islands. During the course of the field work, considerable and varied assistance has been received from officers of the State Health Department, Department of Native Affairs, Local Authority Health Inspectors, and numerous private individuals, whose friendly co-operation and help is hereby gratefully acknowledged.

#### MOSQUITO COLLECTIONS IN THE MILDURA DISTRICT, JANUARY-FEBRUARY, 1952.

The Walter and Eliza Hall Institute, Melbourne, is conducting laboratory and epidemiological researches into Murray Valley Encephalitis (M.V.E.). There is suggestive evidence that mosquitoes are involved in transmission of the disease, and in the summer of 1951-52, an intensive field campaign of adult mosquito collecting in the Mildura district was undertaken in the hope of determining the vector. This campaign was under the direction of Dr. W. C. Reeves, Associate Professor of Epidemiology in the University of California, whose services were loaned to the Hall Institute for three months. Dr. Reeves has done extensive field and laboratory research on encephalitis in California and Pacific Islands.

It was felt that there would be considerable benefit if Dr. Marks were to have the opportunity of working with Dr. Reeves for some weeks and learning his techniques of collecting and the manner in which a field investigation

of this sort is conducted. This experience proved very useful in the similar field work at Townsville. The offer of her assistance was welcomed by the Hall Institute and it was asked that she investigate the larval ecology of the mosquitoes occurring in the district. A request was subsequently received from the Hall Institute that Dr. Marks should extend her visit beyond the three weeks originally planned in order that she might take charge of the entomological field work while Dr. Reeves was absent from Mildura visiting various research institutions. Had she not been available, the continuity of the investigations would have been interrupted, since it was essential that all mosquitoes collected be accurately identified before despatch to Melbourne for laboratory tests.

The investigations at Mildura involved extensive field collecting of mosquitoes in the district. Laboratory work consisted of identification of adult mosquito catches which were sorted into species and sealed in lots of 50 or less in glass tubes. The tubes, stored in dry ice, were sent to Melbourne where samples were tested for virus. Larval collections were also identified and samples of the species preserved but little time was available for breeding of individual specimens for correlated skins. A representative collection was made of bred and wild-caught adults of the species encountered. Of these, the only ones not known from Queensland were *Aedes (Ochlerotatus) camptorhynchus* and an undescribed *Culex* sp. first discovered by F. H. Drummond in Melbourne. Others previously represented in our collection by only a few specimens were *Aedes (Ochlerotatus) theobaldi* and *Tripteroides atripes*. Several males of *Mansonia linealis* were captured—the male of this species is undescribed, and none were in our collection.

*Field Work.*—**LARVAE.** Collections were made from 50 sites representing all the different types of breeding places encountered; several sites were collected more than once. A report on these, plus 13 other collections made by Dr. M. J. Maekerras in December, 1951, has been prepared for incorporation in a full account of the investigations which will be published at some future date.

**ADULTS.** Collections were made by all members of the team. During the day, various sites were examined for resting adult mosquitoes—these included fowl-houses, dairies, sheds, laundries, verandahs and other sites in the vicinity of dwellings; beneath bridges; at the base of burnt out hollow tree stumps; hollows in eaved-in banks of the river, or sand-pits. At night, just after dusk (approximately 8-9 p.m.), specimens were collected biting tethered cattle, or occasionally horses. On one occasion a night collection was made on a tree platform 35 feet from the ground, near the river bank, the collectors using themselves as bait. On two occasions a light trap was used, but few mosquitoes were caught in this way.



# MOSQUITO SURVEYS IN THE TORRES STRAITS AREA.

## (1) INTRODUCTION.

At the request of the Director-General of Health and Medical Services, mosquito surveys were undertaken on Murray and Darnley Islands in order to discover what species was acting as the vector in a malaria epidemic. It is probable that all or nearly all the species of mosquitoes occurring on these islands were collected during the surveys. Briefer and therefore necessarily far less complete surveys were made on Thursday and Horn Islands and in the Banaga-Cowal Creek area on Cape York Peninsula, in order to have some basic information available in the event of further outbreaks of mosquito-borne disease. Malaria appears at present to be the only important mosquito-borne disease in the area, but where a species is capable of carrying filariasis or dengue fever it is noted under the first record of that species in the following lists.

## (2) MURRAY ISLAND—20-26TH JUNE.

The majority of the islanders live in villages which form a continuous settlement along the north-west portion of the island, on a narrow sandy strip between the shore and a steep hillside. In the vicinity of houses, oil drums (six gallon and forty-four gallon) are used for water storage. Giant clam shells and empty tins may be found in the bush nearby; the former are used as water receptacles in pig sties. There are a number of wells. Small watercourses running down from the hillside are dry at this time of year but there is a permanent creek at the northern end of the settlement. This creek is shaded by trees and other vegetation throughout its course and its upper reaches, well up on the hillside, runs through an area of native gardens, for which it provides water. At this time the creek consisted mainly of a chain of isolated sandy, rocky or muddy pools, though in places there was a small flow of water. For about thirty yards from its mouth the creek is tidal. A spraying and drainage programme had been undertaken a week before the mosquito survey commenced.

Household waterdrums and wells had been oiled and the tidal portion of the creek channelled and oiled. The interior of some houses had also been sprayed. During the period of the survey a very strong south-east wind made conditions unsuitable for large numbers of adult mosquitoes to be found biting.

The following species of mosquitoes were collected on Murray Island:—

*Anopheles farauti*.—Larvae were found breeding in freshwater pools throughout the length of the creek, usually sheltering amongst fallen leaves along the pool margins. They were seldom found in more than moderate numbers, but over the total length of the creek there would be a considerable population produced. As a result of the control measures, it was not possible to discover whether this species normally breeds in the lower reaches of the creek. Brackish water is known to provide very favourable breeding places for *A. farauti* and it appears likely that in the wet season when there would be a good flow of fresh water coming down, there might be fairly extensive areas of brackish water in the lower reaches, capable of producing large numbers of this

species. *A. farauti* will also breed at times in artificial containers, but control measures prevented household drums being checked for it here.

A total of only twenty-two adults of *A. farauti* were captured. One was resting in a rock crevice close to a breeding pool. Fifteen were taken biting between 6.30 and 7.30 p.m. in a sheltered spot in the creek bed not far from a breeding pool. (14 Culicine mosquitoes also taken here.) Six *A. farauti* were taken between 6.00 and 7.00 p.m. biting a native family (five children, two adults) on the verandah of their house about 100 yards from the creek (500 Culicines also taken here). All these adults appeared fairly recently emerged and on dissection none had malaria parasites. The small number of adults taken is attributed in part to the unfavourable windy conditions and in part to reduced breeding, probably due to seasonal conditions as well as control measures.

*A. farauti* is one of the chief vectors of malaria in New Guinea and was also proved the vector in a malaria epidemic in Cairns, North Queensland. It is the only species of *Anopheles* found on Murray Island and undoubtedly acted as the vector in the recent malaria epidemic. It can also carry filariasis.

*Culex fatigans*.—The common domestic mosquito, often found in polluted water. Larvae were found in one creek pool in the vicinity of the native gardens, and in a small man-made rock pool collecting hillside seepage water, in an otherwise dry watercourse. *C. fatigans* is the principal vector of filariasis.

*Culex annulirostris*.—Breeding in freshwater pools not far up the creek. Adults taken biting at midday in the bush. A widespread Australian species.

*Culex sitiens*.—Usually breeds in brackish water, such as the portion of the creek that had been sprayed. One larva was found in a freshwater pool not far upstream. Adults taken biting in the bush at midday and before and after dusk. A widespread Australian species.

*Aedes vigilax*.—Probably also bred in the brackish portion of the creek, that had been sprayed. Adults biting in the bush and round houses both by day and night. The common pest species of the Queensland coast.

*Aedes aegypti*.—The common household mosquito. Breeding in old tins and clam shells in the bush close to habitation and in a spiral shell set on top of a wall. There are probably many similar water-holding containers round the villages and the household water-drums would normally provide breeding places. An adult was taken in the vicinity of the cemetery; this species may be breeding in vases and receptacles on graves, as it is known to do so elsewhere. *A. aegypti* is the vector of dengue fever.

*Aedes notoscriptus*.—Larvae were found in the same sites as *A. aegypti*, and also in water in bamboo stumps and tree-cavities. Remarks on possible breeding places of *A. aegypti* apply also to this species. Adults were taken biting in the bush not far from breeding places both before and after dusk.

*Aedes aurimargo*.—This appears to be the dominant species breeding in bamboo stumps and tree-cavities but no adults were taken biting



and it is probably not of importance to man. The majority of tree cavities were found in Poinciana trees.

*Aedes kochi*.—Larvae were found in water in leaf axils of cunjevoi (*Alocasia*). It is also known to breed in the leaf axils of Pandanus, taro, banana and pineapple, and since all these plants are present on the island there must be countless breeding places available to this species. *A. kochi* appears to be the main pest species, at least in that part of the settlement nearest to the creek, where there is an abundance of natural vegetation nearby. In a collection made between 6.00 and 7.00 p.m. from a native family seated on the verandah of their house, there were approximately 490 *A. kochi* compared with 15 adults of other species (6 *A. farauti*, 9 *A. vigilax*). This was the only species collected when a count was made of mosquitoes killed by spraying the interior of native houses. Adults were also taken biting after dusk in the bush. *A. kochi* is capable of carrying filariasis. Control of this species appears impracticable owing to the nature and variety of its breeding places.

### (3) DAUAR ISLAND.—JUNE 25TH.

Dauar is a small hilly island close to Murray Island. At the time of this visit, household water receptacles had been kerosened and the only watercourse of any size was dry. Only one species was found on the island but no search was made for mosquito larvae in treeholes, bamboo stumps or leaf axils.

*Aedes aegypti* larvae occurred in three 44-gallon drums set under an overhanging cliff on the sea shore to catch water from a soakage. This situation was at least 200 yards from the nearest habitation and exposed to very strong winds. Larvae of *A. aegypti* were also found in two deep wells cut in the rock close to the sea-shore, the water in these wells being about 6 feet below the mouth which was covered with iron and boards. These are both unusual sites for *A. aegypti* to be found breeding and it is not unlikely that it would normally be found in household containers on the island and that when these are used for drawing water, eggs or larvae may be washed into the drums or wells.

### (4) DARNLEY ISLAND.—JUNE 20TH, JUNE 27TH—JULY 9TH.

Darnley Island has a central hill which slopes more gradually down to the shore than the hill on Murray Island. The coastline is broken into a series of small bays and each bay receives a creek running down from the hill. When each creek reaches the beach it does not run directly into the sea, but the mouth is blocked by a sandbank several feet high. This does not affect the tidal nature of the lower reaches of the creek. During the monthly high tides the creek is filled and residual salt water pools remain behind the sandbank when the tides become lower. Wells have been dug beside the creeks further upstream. In some places soakages in the vicinity of a watercourse form swampy areas; one such supported dense taro and cunjevoi, and another, sago palms. The villages are built on a series of bays along the southern portion of the island. Household water containers are similar to those on Murray Island. One series of these was examined during the brief visit of

June 20, but when the survey was undertaken a week later, drums and tanks had been oiled. At this time many of the creeks were dry, or had only the salt pool behind the beach. Those creeks near the villages which were still running or had isolated fresh pools had been oiled, wells had been oiled and the taro swamp partially drained. Very strong south-east winds made conditions highly unfavourable for collection of adult mosquitoes. Thirteen species were found on Darnley Island.

*Anopheles farauti*.—Larvae were found in old 6-gallon oil drums half filled with soil or leaf-mould, covered by several inches of rain water. These were in the yard of the school teacher's residence. In spite of repeated search both in the vicinity of the villages and in creeks on the far side of the island where no control measures had been undertaken, no other larvae of *A. farauti* were found but since some of these creeks extend a considerable distance it is quite probable that a certain amount of breeding is going on there. In several different localities an attempt was made to catch adults after dusk, with native volunteers acting as additional bait, but no mosquitoes at all were taken biting on these occasions, and no adults of *A. farauti* were collected on Darnley Island. There can be no doubt however that this species acted as the vector in the recent malaria epidemic.

*Culex fatigans*.—Larvae found in old oil drums with *A. farauti*, also in a small wood-sided soakhole sunk in the ground under the tap of a domestic tank, and in an old clam shell amongst grass near native houses. Probably normally breeds extensively in domestic situations.

*Culex (Lutzia) halifaxi*.—Larvae found in the same oil drums and wooden soakhole as *C. fatigans*. The larvae are predacious on other mosquito larvae and adults are not known to bite man.

*Culex annulirostris*.—This species normally breeds in fresh water but occasionally occurs in brackish water. On Darnley Island, a few larvae were found in a very brackish pool at the mouth of a creek.

*Culex sitiens*.—This species was breeding in very brackish pools at the mouths of a number of creeks. In one of these situations adults were taken biting amongst mangroves.

*Aedes vigilax* was also taken biting amongst mangroves. Larvae would almost certainly be found in pools left by very high tides in the lower parts of the watercourses, but these had dried out at the time of the survey.

*Aedes scutellaris scutellaris*.—This species apparently takes the place of *A. aegypti* on Darnley Island, as no *A. aegypti* were found here. *A. scutellaris* was breeding in the oil drums with *A. farauti*, &c.; in a similar drum near a deserted dwelling; in a coconut husk; in a number of tree cavities in mangroves and poinciana trees. Adults were taken by day inside a native house and in the vicinity of tree cavity breeding places. This species acts as a vector of dengue fever in New Guinea.

*Aedes aurimargo*.—Larvae were found in one tree cavity in a mango tree but this species does not appear to occur in such large numbers as on Murray Island. One adult was taken biting in the bush,



*Aedes* (*Maeleaya*) n.sp.—An undescribed species closely related to the mainland species, *Aedes tremula*. This appears to be the dominant treehole species on Darnley Island. It was found in mangoes, poincianas and mangroves, in which it was usually more numerous than larvae of *A. scutellaris scutellaris*. It was also breeding in an old oil drum beside a deserted dwelling. No adults were taken and it is probably not of importance to man, though the related *A. tremula* is a vicious biter.

*Aedes kochi*.—Larvae were collected from conjevoi (*Alocasia*) axils but not from adjoining taro (*Coloeasia*) plants in a taro swamp. As on Murray Island its breeding places are probably very numerous. It was also taken biting in the bush in the late afternoon.

*Harpagomyia genurostris* and *Harpagomyia leei*.—Larvae found in axils of both conjevoi and taro. Very small mosquitoes, the adults of which are incapable of biting.

*Uranotaenia argyrotarsis*.—Larvae in pools in a sago swamp. A very small mosquito the adult of which is not known to bite man.

#### (5) NEPEAN ISLAND.

A coral cay about eight miles from Darnley Island, supporting a dense grove of coconuts and a few other trees. One native family normally reside there. There are no water-courses. No larvae could be found in a well in the middle of the island. Only one species was collected.

*Aedes scutellaris scutellaris*.—Larvae in domestic water tanks and barrel and in clam shells near the house and well.

#### (6) GENERAL NOTES ON THE OCCURRENCE OF *Anopheles farauti* ON MURRAY AND DARNLEY ISLANDS.

There is nothing to suggest that *A. farauti* is a recent introduction to these islands. It is obvious that in order for it to act as vector in a malaria epidemic it would have to occur in far greater numbers than those observed during the surveys and the following is the probable explanation of fluctuations in populations. Control measures, undertaken approximately a week before the surveys, were probably a contributory factor in the reduction of population, particularly of larvae. Adult *Anopheles* have to survive approximately twelve days in order to be capable of transmitting malaria, and therefore, if control measures were the only factor operating against them, one would expect a fair catch of specimens which had emerged before spraying commenced. In fact, the only adults collected (on Murray Island) were all fairly recent emergencies. It is believed that the strong winds (south-east) blowing almost constantly at this time of year make conditions very unfavourable for the survival of large numbers of adult mosquitoes for more than a very short period; and likewise unfavourable for them to travel any distance from their breeding places in search of blood-meals. Reduced numbers of females laying eggs, and individual females laying a reduced number of batches, together with cooler conditions which prolong the period of larval life, have the combined effect of a considerable reduction in population.

*A. farauti* will breed in a great variety of surface water sites, either in shaded or exposed situations. Puddles are particularly favoured, and it breeds readily in brackish water at least up to 30 per cent. seawater. During the period of the north-west monsoons when there is heavy rain probably many puddles are formed while the flow of water in the creeks may dilute the salt water pools near their mouths and provide extensive brackish water breeding places. With more breeding places available and higher temperatures which allow the generations to breed through more quickly, there would be a build up in the population of *A. farauti*. The period of still, warm weather between the end of the north-west monsoons and the beginning of the south-east trade winds would provide ideal conditions for the maximum survival of adults and it is likely that at this period the population reaches its peak and conditions are most favourable for malaria transmission.

It should be possible to bring this species under control by spraying its breeding places with DDT. Spraying might be undertaken particularly at two periods—firstly in the dry season in the winter, when breeding places and Anopheline numbers are at a minimum, in order to reduce the population still further; secondly at the end of the wet season in order to eliminate the build up of large populations in the period of still weather. In view of the fact that *A. farauti* can colonise a wide variety of sites, it would be advisable that such spraying should be, at least initially, under the direction of someone experienced in mosquito control and familiar with the habits of Anopheline mosquitoes and methods of collecting them. Otherwise control measures may be directed against sites which are breeding few if any Anophelines while prolific breeding places may escape observation.

#### (7) THURSDAY ISLAND—JULY 14TH.

Control measures including the oiling and clearing of water courses, and introduction of fish had been already taken at the time of the survey. No larvae were found in reservoirs and their tributary channels, or portions of creeks and various wells and tanks which had been treated. However in creeks where the oil film was incomplete or where there were no fish, *Anopheles* larvae were found. The following species were collected on the island, but there is little doubt that others might be found, and the possibility that *A. farauti* occurs cannot be ruled out.

*Anopheles annulipes*.—Breeding in small weedy pools overhung with grass, in a water-course near Eagle camp. These pools had been sprayed but the oil film had almost disappeared. Also in the upper portion of Neville's gully, above a road culvert. (Below the culvert there were numerous fish in the creek.) This species is capable of acting as a vector of malaria.

*Anopheles meraukensis*.—Breeding in the same pools as *A. annulipes* near Eagle Camp. Capable of acting as a vector of malaria.

*Culex fatigans*.—Breeding in a concrete well at the west end of the island, also in a hydroponics tank. Adults resting in an oil drum at Eagle Camp, and in a hotel bedroom.

*Culex* (*Lutzia*) *halifaxi*.—Breeding in the concrete well with *C. fatigans*.



*Culex annulirostris*.—Breeding with *A. annulipes* in Neville's gully.

*Aedes aegypti* in water from domestic tank.

(8) HORN ISLAND—JULY 15TH.

Nine species or subspecies were collected but others are almost certain to occur.

*Anopheles novaguinensis*.—Larvae collected in small pools in Vidgen Creek and in swamp pools in Vidgen Swamp. Adults bite man, but this species has not been proved capable of carrying malaria.

*Anopheles powelli*.—Larvae along the sandy edge of a small stream below the reservoir. (No mosquito larvae were found in the reservoir.) *A. powelli* is a small rare species not known to bite man.

*Culex annulirostris*.—Breeding in pools in Vidgen Swamp, and in a fresh waterhole beside the aerodrome.

*Culex squamosus*.—Breeding in pools in Vidgen swamp.

*Culex vicinus*.—Breeding in small creek below the reservoir.

*Culex fraudatrix fraudatrix*, *Culex fraudatrix cairnsensis*.—Breeding in pools in Vidgen Creek.

*Aedes vigilax*.—Breeding in open pools in a salt marsh near the aerodrome. Adults biting in the bush.

*Anopheles meraukensis*.—Breeding in a titree fresh waterhole near the aerodrome. Not of medical importance.

*Uranotaenia albescens*.—Breeding in pools in Vidgen Swamp. Adults are not known to bite man.

(9) BAMAGA—COWAL CREEK AREA—  
JULY 12-13th.

This area must support a great variety of mosquitoes, since the twenty-six species or subspecies recorded here were all collected during one day and evening.

*Anopheles farauti*, *Anopheles annulipes*, *Anopheles meraukensis*.—Breeding in a titree and pandanus swamp near Cowal Creek.

*Anopheles novaguinensis*.—Adults taken biting horses between 6.30 and 7.30 p.m. in the bush beside Black Gin Creek at Bamaga.

*Anopheles powelli*.—Larvae in a small shaded creek between Bamaga and Red Island Point. Adults taken with *A. novaguinensis*, biting horses.

*Anopheles bancrofti*.—Larvae in titree and pandanus swamp near Cowal Creek, and adults biting in the vicinity. Capable of carrying malaria.

*Culex annulirostris*.—Adults taken with *A. novaguinensis* biting horses, and also biting man in the swamp near Cowal Creek.

*Culex fraudatrix fraudatrix*.—Breeding in shaded pools along Black Gin Creek at Bamaga, and in shaded creek between Bamaga and Red

Island Point. Adults were taken resting at the latter site and also in the swamp near Cowal Creek.

*Culex fraudatrix annulata*.—Breeding in shaded creek between Bamaga and Red Island Point.

*Culex (Lutzia) halifaxi*.—Breeding in the swamp near Cowal Creek and in pools in the creek between Bamaga and Red Island Point.

*Culex* spp.—An apparently undescribed species of *Culex* was breeding in the swamp near Cowal Creek, and an unidentified *Culex* larva was found in the pitcher plant swamp at Skull Creek.

*Aedes vigilax*.—Biting in the bush along Black Gin Creek and in the swamp near Cowal Creek.

*Aedes notoscriptus*.—Adults taken with *A. novaguinensis* biting horses; also biting man during the day along Black Gin Creek.

*Aedes aurimargo*.—Breeding in a treehole in rain forest near Cowal Creek.

*Aedes koehi*.—Breeding in *Crinum* axils at Skull Creek.

*Aedes wallacei*.—A New Guinea species not previously recorded from Australia. Adults were taken biting in rain forest near Cowal Creek. In New Guinea larvae of this species have been found in plant axils.

*Tripteroides filipes*, *Tripteroides vanleeuweni*, *Tripteroides longipalpata*?, *Tripteroides brevihynchus*.—These species of *Tripteroides* breed in the pitchers of pitcher plants and the adults may be taken biting in the vicinity of breeding places but are not of medical importance. All were taken at Skull Creek in the pitcher plant swamp, the first three biting, and all as larvae from pitchers. *T. vanleeuweni* and *T. longipalpata* have only been recorded from New Guinea.

*Tripteroides bimaeulipes*.—Adults taken biting in the pitcher plant swamp at Skull Creek, in bush along Black Gin Creek, and in rain forest near Cowal Creek. This species breeds in tree cavities and is not known to carry disease.

*Hodgesia quasisanguinea*.—Breeding in shaded creek between Bamaga and Red Island Point. Biting along edge of pitcher plant swamp at Skull Creek, in bush along Black Gin Creek and in scrub near Cowal Creek. A very small species, a vicious biter near its breeding places, but not known to carry disease.

*Uranotaenia nivipes*.—Breeding in shaded pools in Black Gin Creek at Bamaga. Not known to bite man.

*Uranotaenia* sp.—A common but undescribed species, breeding in the same pools as *U. nivipes* in Black Gin Creek, also in the creek between Bamaga and Red Island Point. In both places, adults were taken resting close by. Not known to bite man.

*Uranotaenia* sp.—An unidentified *Uranotaenia* larva was taken in the creek between Bamaga and Red Island Point.



## APPENDIX B.

**THE RECENT POLIOMYELITIS OUTBREAK IN QUEENSLAND.**

By D. W. JOHNSON, Deputy Director-General of Health and Medical Services.

In October, 1950, the worst outbreak of poliomyelitis on record in Queensland began, when cases of the disease were reported from the Rockhampton district. From October, 1950, to the end of June, 1952, 1,173 proved cases of poliomyelitis occurred in this State. Up till then the worst outbreaks had been those of 1914-15 with 332 cases, and 1945-46 with 429 cases.

The reasons why poliomyelitis should reach this high level of incidence are not at all clear, but experience in America may be a guide. Poliomyelitis is present in all communities, but the age when infection first occurs rises with the standard of hygiene in the community. For instance, Hammon obtained samples of serum from normal children over a wide range of age groups in numerous separate areas and countries, and found that antibodies to poliomyelitis developed later in life in Californian children than in children living in some crowded southern United States cities. In Californian cities, the proportion of children with antibodies tended to decrease or to remain constant after 6 to 9 years of age, suggesting that the antibodies were temporary and that they required frequent exposure to the virus to maintain their level in the blood. Antibodies developed earlier in children from the lowest economic groups, and family size appeared to be also a factor in influencing spread of virus, for infection appeared to spread rapidly in families, and children from large families had more antibodies than children from small families. This has been confirmed by other American workers.

A later survey by Paul and his co-workers on Egyptian children shows that antibodies to all three known types of poliomyelitis virus are present in 75 per cent. of children before they are four years old, whilst antibodies to the Lansing virus are present in more than 50 per cent. of children before they reach the age of two years. In circumstances like this, poliomyelitis is still truly infantile paralysis, and the paralytic type, though not uncommon, is confined to children.

Sabin, discussing the low incidence of paralytic poliomyelitis in children of the Far East, Africa, and other primitive population groups, at a time when American troops living in those areas kept developing paralytic poliomyelitis, considers that immunity in the permanent population could not be attributed to inborn immunity or to immunity conveyed through the mother's milk, because surveys showed that the majority of babies were still without antibodies at the end of the first or second year of life. He thinks that when poliomyelitis virus is widely distributed in a community, paralytic poliomyelitis is rare amongst the indigenous population, and that the poorer the population, the lower its standards of living and sanitation,

the lower is the incidence of paralytic poliomyelitis when a virulent virus appears. Conversely, therefore, the higher the standard of living and sanitation, and the more scattered the population, the more cases of paralytic poliomyelitis will occur when a virulent virus is introduced.

All these latter factors operate in Queensland, and the last known extensive dissemination of virus occurred here in 1945-46. It can be assumed, therefore, that the majority of people in Queensland had had no contact with poliomyelitis virus for over four years. It is known that poliomyelitis antibodies do not remain long at a protective level in the blood in the absence of exposure to the virus, and therefore it must be assumed that the antibody level in the population was not high when the outbreak commenced in October, 1950. In addition, more than 100,000 children had been born in Queensland since the last outbreak of poliomyelitis.

The findings of Paul and Reordan in Alaska are of interest in this connection. An Eskimo village had an outbreak of poliomyelitis in 1930. In 1949, the only people with poliomyelitis antibodies in this village were over 19 years of age, indicating that those under this age had never been exposed to poliomyelitis virus.

In countries, such as Queensland, with a low incidence of endemic poliomyelitis (less than 30 cases per year), the march of an epidemic through the population is attended by a large number of definite, as opposed to sub-clinical, cases of the disease, and the majority of those who develop clinical poliomyelitis show muscle involvement. It means that a strain of high virulence is introduced from some unknown source, and spreads rapidly in a population which has not been sufficiently immunized by contact with strains of low virulence.

It is this factor which makes control of an outbreak so difficult. To suggest that the people of this State should live in squalid overcrowded conditions in order to develop immunity to poliomyelitis is unthinkable, yet poliomyelitis will continue to occur in epidemics of increasing severity as the standard of living and sanitation continues to improve, unless medical science can develop some method of active immunization to equal the efficiency of the methods used against yellow fever and smallpox. The recent work of Koprowski and his co-workers in feeding poliomyelitis virus to human volunteers is a pointer to future progress. Ways and means must be found to attenuate poliomyelitis virus (or rather, the three types of virus), to grow them on a mass scale, and to make a simple immunization procedure available to people susceptible to the disease. These methods await development, and even when active immunization is an established procedure, frequent "booster" doses to maintain a high antibody level will probably be found necessary.



Poliomyelitis prevention is a major task for medical research, and must be carried on in well endowed institutions staffed by highly skilled personnel. Much of the ground work has been completed, but the evolution of practical methods of active immunization is likely to occupy a fairly longer period. It is probable that the next ten or twenty years will see definite progress in this direction.

*The Pathway of Infection in Poliomyelitis.*

It is not definitely known how poliomyelitis virus is transferred from one person to another. It is present in the throat (or oro-pharynx) and in the faeces of apparently healthy people, who act as "carriers" of the virus. Usually, virus disappears from the oro-pharynx in a few days, but it can be excreted in the faeces of healthy and convalescent carriers for several weeks. Whilst in the throat it can obviously be expelled into the air by sneezing, coughing or even talking, and so could enter the throats of other people. It could also be transferred in saliva—for instance, when children suck pencils and then exchange them, when they offer a bite of fruit or lolly to another child, or even by adults adopting unhygienic practices when handling food, money or postage stamps. Or virus could be transferred by kissing.

From the faeces the virus could reach others by means of food, the handshake, or through common objects of contact such as door knobs, tram-straps, public counters, etc., if the carrier did not wash his hands carefully after coming from the toilet. Virus could be transferred to others by water, by flies, or by imperfectly washed glasses and crockery. All these means are available to the virus, and there is no doubt that at times all are used; but no single method of transmission has been proved.

It is known, however, that when a case occurs in a household, every member in that household quickly becomes a carrier of virus. The fact that multiple infections in a family are relatively uncommon, indicates that for some reason or other the virus present in the throats of carriers finds it difficult to spread to the nervous system. The quantity of virus may not be large enough to infect, or perhaps some condition of the throat must be present before the virus escapes into the blood stream. More likely than these factors is probably the immunity of the individual. If a person's blood contains poliomyelitis antibodies, small quantities of virus reaching the blood stream are neutralized immediately and so cannot reach the nervous system to cause the signs and symptoms of poliomyelitis.

As was mentioned earlier, virus entering the throat does not remain there long. Animal experiments, as well as observations on human subjects, indicate that the virus travels from the throat to the alimentary tract and that it multiplies considerably in the lining membrane of the intestine. Thus the virus has a short period in the throat (called the oro-pharyngeal phase), and a second but longer period in the small intestine (called the alimentary phase), and in neither location does it appear to cause ill-health. To cause symptoms the virus must reach the blood, either directly from some breach in the lining membrane barrier or indirectly by spreading to the lymph nodes and spleen and later reaching the blood stream from these tissues.

Once the virus reaches the blood, some or all may be neutralized by circulating antibodies, but unneutralized virus is then free to spread to the nervous system. There is considerable evidence that virus multiplication occurs in lymphoid tissue in close contact with the blood stream. The presence of virus in the blood causes fever and malaise.

Although it is not known at what point virus enters the nervous system from the blood, the localised distribution of paralysis in most cases indicates that it enters at a single point. For instance, injury to the muscles of a limb will frequently localise paralysis to that limb, and experimentally it has been shown that if virus is inoculated into a nerve and the nerve is severed between the site of inoculation and the spinal cord, paralysis does not ensue. The virus thus probably travels to the central nervous system along a nerve, and it seems to be able to enter a nerve following damage in the tissues which that particular nerve supplies. Injury, inoculation, surgical interference to a limb or to the mouth and throat can presumably allow infection of nerves to occur. Probably over-use of muscles, as in strenuous exertion, may also facilitate entry of the virus to the central nervous system.

Once in the spinal cord, the virus multiplies a third time, and the extent of multiplication seems to determine whether the patient will not develop paralysis, or will develop localised paralysis, or extensive paralysis. In all cases the patient develops headache, and stiffness of the neck and back, in addition to whatever muscle involvement may occur.

*Proved or Established Cases of Poliomyelitis.*

In several of the following tables, it will be noted that the number of notifications exceeds the number of proved or established cases. In other places, and in this State on several previous outbreaks, all notifications of poliomyelitis were accepted, and figures were based on the number of notifications. Experience has shown that not all notified cases are poliomyelitis. The attending doctor is required by law to notify poliomyelitis when he suspects it, and in a certain proportion of cases the diagnosis is later altered. In this epidemic, immediately on receipt of a notification, a letter was sent to the medical superintendent of the hospital where the patient was isolated, requesting a progress report. Thus diseases simulating poliomyelitis in its non-paralytic stages were eliminated from the final figures.

A patient was accepted as having poliomyelitis—

- (a) if, after a febrile illness, he developed muscular weakness or paralysis;
- (b) if he developed fever, headache, neck and back stiffness after contact with a known case of paralytic poliomyelitis; or
- (c) if he developed fever, headache, neck and back stiffness not due to causes other than poliomyelitis, and the cerebrospinal fluid showed an increase in cells.

In the present epidemic, 170 notifications (or 14.5 per cent.) of the total notifications were regarded as not having poliomyelitis.



Monthly Incidence.

The present epidemic began in the country districts in October, 1950, and reached its peak in the extra-metropolitan area during April, 1951, thereafter declining slowly. On the other

hand, cases did not occur in the Greater Brisbane area until December, 1950 (a lag of two months), and the peak was reached in July, 1951. Notifications month by month, dissected into paralytic and non-paralytic, are set out in Table 1.

TABLE 1.

SHOWING MONTHLY NOTIFICATIONS OF POLIOMYELITIS IN QUEENSLAND FROM 1ST OCTOBER, 1950 TO 30TH JUNE, 1952, SHOWING PARALYTIC AND NON-PARALYTIC, AND WHETHER METROPOLITAN OR EXTRA-METROPOLITAN.

				Proved Cases.									Negative.	Total Notifi- cations.
				Metropolitan.			Extra-Metropolitan.			Whole State.				
				P.	N-P.	T.	P.	N-P.	T.	P.	N-P.	T.		
1950—														
October	..	..	..	..	..	..	11	1	12	11	1	12	1	13
November	..	..	..	..	..	..	28	3	31	28	3	31	6	37
December	..	..	..	6	..	6	35	3	38	41	3	44	8	52
1951—														
January	..	..	..	10	3	13	88	8	96	98	11	109	11	120
February	..	..	..	10	..	10	89	22	111	99	22	121	25	146
March	..	..	..	30	8	38	74	32	106	104	40	144	16	160
April	..	..	..	40	8	48	91	21	112	131	29	160	21	181
May	..	..	..	31	7	38	78	15	93	109	22	131	10	141
June	..	..	..	25	7	32	29	3	32	54	10	64	14	78
July	..	..	..	56	4	60	32	1	33	88	5	93	11	104
August	..	..	..	21	3	24	26	8	34	47	11	58	12	70
September	..	..	..	6	3	9	7	2	9	13	5	18	8	26
October	..	..	..	8	2	10	2	..	2	10	2	12	4	16
November	..	..	..	14	2	16	9	4	13	23	6	29	3	32
December	..	..	..	32	8	40	10	2	12	42	10	52	5	57
1952—														
January	..	..	..	13	3	16	13	1	14	26	4	30	6	36
February	..	..	..	12	2	14	12	1	13	24	3	27	6	33
March	..	..	..	1	2	3	8	..	8	9	2	11	2	13
April	..	..	..	4	1	5	8	..	8	12	1	13	..	13
May	..	..	..	2	1	3	6	..	6	8	1	9	..	9
June	..	..	..	2	..	2	3	..	3	5	..	5	1	6
				323	64	387	659	127	786	982	191	1,173	170	1,343

P=Paralytic poliomyelitis.  
N-P.=Non-paralytic poliomyelitis.  
T=Total of proved cases.

Geographical Distribution of Cases in the Present Outbreak.

In October, 1950, 13 cases of poliomyelitis were notified, of whom 12 were definite cases. Most of these patients lived in coastal Queensland, between Rockhampton and Ayr. It is not known why the outbreak should start in this area, but several towns in this district have commercial air ports, and the region has many tourist attractions. In the next two months, the disease occurred in Collinsville, Townsville, Gympie, Ipswich, Warwick, Babinda, Mossman, Redcliffe, and Brisbane, indicating a fairly wide and rapid dissemination of the virus. Thereafter, cases of the disease were notified from all parts of the State, and the number of cases and attack rates in the various statistical areas of Queensland are shown in Table 2 and Figure 1. The North-Western area (which includes the Shires of

Cloncurry, Carpentaria, and Etheridge) had the highest attack rate of 4.40 cases per 1,000 population, followed by Darling Downs (1.86), Peninsula (1.25), South-Western (1.24), Moreton (1.18), and Townsville (1.13). As North-Western and South-Western statistical divisions are sparsely populated, the population has little opportunity to develop the same degree of immunity as the population in larger cities. The Darling Downs division, however, is one of the most closely settled areas, and cities such as Warwick and Toowoomba, with a total population exceeding 44,000, provided more than the expected number of cases. These cities have a high standard of living and sanitation. The Greater Brisbane area with a population of 450,300 had an attack rate of 0.86 cases per 1,000 population, whilst the attack rate for the whole State was 0.97 cases per 1,000 population.





FIGURE 1.

Showing Incidence of Poliomyelitis 1950-52  
in Fourteen Statistical Areas of Queensland.  
(Figures denote Proved Cases per 1,000 Population.)







TABLE 2.

INCIDENCE OF POLIOMYELITIS FROM 1ST OCTOBER, 1950, TO 30TH JUNE, 1952, IN THE FOURTEEN  
STATISTICAL DIVISIONS OF QUEENSLAND.

Statistical Division.	1950-52.		Attack Rate per 1,000 Population.	1945-46.	
	Proved Cases.	Population at 30th June, 1951.		Cases.	Attack Rate per 1,000 Population.
1. Metropolitan .. .. . (Greater Brisbane area)	387	450,300	0.86	105	0.27
2. Moreton .. .. . (City of Ipswich (26); Towns of Redcliffe (36); and South Coast (11); Shires of Albert (2); Beaudesert (20); Boonah (4); Caboolture (18); Esk (8); Gatton (10); Kilcoy (19); Laidley (0); Landsborough (9); Maroochy (10); Moreton (1); Pine (7); and Redland (5) )	186	157,820	1.18	55	0.42
3. Maryborough .. .. . (Cities of Bundaberg (3); Gympie (5); and Maryborough (13); Shires of Biggenden (0); Burrum (3); Eidsvold (0); Gayndah (2); Gooburrum (1); Isis (0); Kilkivan (2); Kingaroy (13); Kolan (0); Mundub- bera (2); Murgon (5); Nanango (4); Noosa (1); Perry (0); Tiaro (4); Widgee (12); Wondai (3); Woocoo (0); and Woongarra (0) )	73	120,750	0.60	23	0.21
4. Downs .. .. . (Cities of Toowoomba (81); and Warwick (13); Towns of Dalby (7); and Goondi- windi (7); Shires of Allora (1); Cambooya (1); Chinchilla (11); Clifton (4); Crow's Nest (2); Glengallan (23); Inglewood (4); Jondaryan (4); Milmerran (9); Murilla (1); Pittsworth (10); Rosalie (11); Rosenthal (3); Stanthorpe (26); Tara (3); Waggamba (1); and Wambo (11) )	233	125,400	1.86	101	0.96
5. Roma .. .. . (Town of Roma (6); Shires of Balonne (3); Bendemere (0); Booringa (0); Bungil (0); and Wooroo (0) )	9	16,310	0.55	7	0.43
6. South-Western .. .. . (Town of Charleville (5); Shires of Bulloo (0); Murweh (0); Paroo (6); and Quilpie (4) )	15	12,070	1.24	1	..
7. Rockhampton .. .. . (City of Rockhampton (21); Town of Glad- stone (7); Shires of Banana (4); Broad- sound (0); Calliope (3); Duaringa (2); Fitzroy (1); Livingstone (7); Miriam Vale (0); Monto (4); Mount Morgan (0); Taroom (5); and Theodore (0) )	54	85,210	0.63	30	0.40
8. Central Western .. .. . (Shires of Aramac (0); Barcaldine (0); Bauhinia (3); Belyando (7); Blackall (0); Emerald (2); Ilfracombe (0); Jericho (0); Longreach (0); Peak Downs (0); and Tambo (0) )	12	21,850	0.55	18	0.78
9. Far Western .. .. . (Shires of Barcoo (0); Boulia (1); Isisford (0); and Winton (1) )	2	5,030	0.40	..	..
10. Mackay .. .. . (City of Mackay (4); Shires of Mirani (2); Nebo (0); Pioneer (14); Proserpine (0); and Sarina (1) )	21	40,520	0.52	9	0.28
11. Townsville .. .. . (Cities of Townsville (35); and Charters Towers (3); Town of Bowen (2); Shires of Ayr (30); Dalrymple (1); Thuringowa (8); and Wangaratta (1) )	80	71,110	1.13	30	0.41
12. Cairns .. .. . (City of Cairns (15); Shires of Atherton (6); Cardwell (3); Douglas (1); Eacham (1); Herberton (2); Hinchinbrook (8); John- stone (2); Mareeba (7); and Mulgrave (11) )	56	79,020	0.71	20	0.28
13. Peninsula .. .. . (Town of Thursday Island (3); and Shire of Cook (0) )	3	2,410	1.25	..	..
14. North Western .. .. . (Town of Hughenden (0); Shires of Barkly Tableland (0); Burke (0); Carpentaria (2); Cloncurry (27); Croydon (0); Etheridge (11); Flinders (0); McKinlay (0); and Wyangarie (2) )	42	17,470	2.40	5	0.30
	1,173	1,205,270*	0.97	..	..

\* The population of the State of Queensland at 30th June, 1951, was 1,211,240. The figure given above is for statistical divisions only, and does not include 1,970 migratory persons and 4,000 not incorporated in a statistical division.



TABLE 3.

SHOWING AGE DISTRIBUTION, TOGETHER WITH PERCENTAGE AGE DISTRIBUTION AND ATTACK RATE PER 100,000 POPULATION IN EACH AGE GROUP. (WHOLE STATE : 1ST OCTOBER, 1950 TO 30TH JUNE, 1952.).

Age Group.	Males.				Females.				Both Sexes.			
	No. of Cases.	Percent-age of Total.	Popu-lation.	Attack Rate per 100,000	No. of Cases.	Percent-age of Total.	Popu-lation.	Attack Rate per 100,000	No. of Cases.	Percent-age of Total.	Popu-lation.	Attack Rate per 100,000
0— 1 .. .. .	30	4.45	14,654	204.72	12	2.41	14,019	85.60	42	3.58	28,673	146.48
1— 4 .. .. .	124	18.40	57,723	214.82	80	16.07	54,887	145.75	204	17.39	112,610	181.16
5 —9 .. .. .	158	23.44	57,747	273.61	126	25.30	56,438	223.25	284	24.23	114,185	248.72
10—14 .. .. .	103	15.28	49,043	210.02	75	15.06	46,528	161.19	178	15.19	95,571	186.25
15—19 .. .. .	111	16.32	43,324	256.21	61	12.25	41,480	147.06	172	14.65	84,804	202.82
20—24 .. .. .	62	9.20	46,284	133.96	58	11.65	44,381	130.69	120	10.23	90,665	132.36
25—29 .. .. .	40	5.93	48,477	82.51	45	9.03	45,734	98.40	85	7.25	94,211	90.22
30—34 .. .. .	26	3.86	45,608	57.00	21	4.22	43,950	47.78	47	4.00	89,558	52.48
35—39 .. .. .	10	1.48	45,162	22.14	13	2.61	43,066	30.19	23	1.96	88,228	26.07
40—44 .. .. .	2	.30	42,721	4.68	2	.40	38,045	5.25	4	.34	80,766	4.95
45—49 .. .. .	6	.89	35,862	16.73	2	.40	31,972	6.25	8	.68	67,834	11.79
50—54 .. .. .	1	.15	33,646	2.97	2	.40	32,278	6.20	3	.25	65,919	4.55
55 and over .. .. .	2	.30	99,398	2.01	1	.20	98,818	1.01	3	.25	198,216	1.51
All ages .. .. .	675	100.00	619,649	108.93	498	100.00	591,591	84.18	1,173	100.00	1,211,240	96.76

Age and Sex Distribution of Cases.

Table 3 shows the age distribution of 1,173 proved cases of poliomyelitis, the percentage of cases in each age group, and the attack rate for each age group.

Of 1,173 cases of poliomyelitis, 675 (or 57.6 per cent.) occurred in males and 498 (or 42.4 per cent.) in females. In the population of Queensland, males represent 51.2 per cent. of the total, so that males are affected with poliomyelitis more frequently than females.

There is a preponderance of male patients in all age groups except for the age groups 20-24, 25-29, 30-34, and 35-39, when female cases approximate the number of males, the respective totals for the age groups mentioned being 138 males to 137 females (see Figure 2.). Actually the attack rates for females exceed the attack rates for males only in the age groups 25-29 and 35-39, and these relatively high attack rates in females may be associated with the strains of pregnancy. Of 139 women between 15 and 45 years of age who contracted poliomyelitis, it is known that 17 were pregnant, which is approximately the same ratio as in the female population of child-bearing age. Of these cases, 3 died, giving a mortality rate of 17.6 per cent., as compared with a mortality rate of 9 per cent. over the whole series of 1,173 cases. It appears, therefore, that a pregnant woman is not more likely to develop poliomyelitis than a normal person, but if she does, her chances of surviving the attack are only half those of other patients. The increased attack rates for males in all other age groups may be related to the greater physical activity of males, but it is unwise to speculate on this aspect when it is known that infectious diseases as a whole infect more males than females.

Poliomyelitis still attacks more people in the age group 5-9 years than any other, but in this epidemic there is a definite shift to the older age groups—e.g. 10-14 and 15-19. In fact, the

attack rate was higher in the 15-19 year age group than in the 10-14 year age group, and was the highest attack rate recorded apart from the attack rate in the age group 5-9 years. Indeed, persons 15 years of age and over contributed 39.6 per cent. of all cases of poliomyelitis, compared with 34.6 per cent. in 1945-46, 25.79 per cent. in 1941 and 22.4 per cent. in 1938. It is apparent that each successive Queensland outbreak is attacking proportionately more persons in the older age groups.

The relatively high attack rate in children under the age of 1 year is rather surprising, particularly the high attack rate in male children of this age group. The great preponderance (30 to 12) of male children attacked cannot be explained in terms of increased physical activity. It seems that male infants are more susceptible, but poliomyelitis is still rare in babies under six months of age.

TABLE 4.

SHOWING AGE AND SEX DISTRIBUTION OF 42 CASES OF POLIOMYELITIS IN CHILDREN UNDER 1 YEAR OF AGE.

Age.	Male.	Female.	Total.
0— 2 months .. .. .	0	1	1
3— 5 months .. .. .	3	2	5
6— 8 months .. .. .	5	2	7
9—11 months .. .. .	22	7	29
Total under 1 year .. .. .	30	12	42

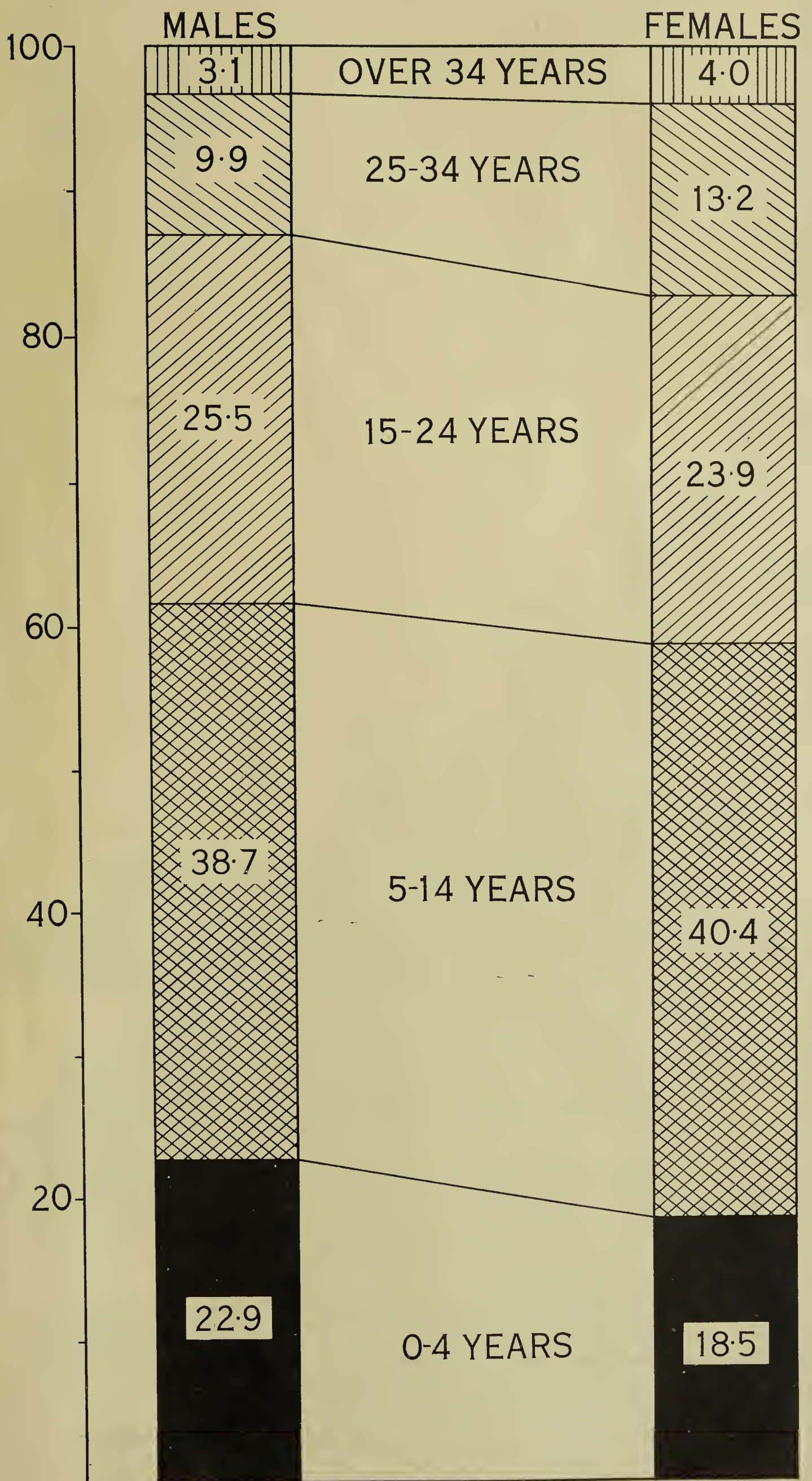
No fewer than 29 of 42 infants, representing 69 per cent. of the total, were between 9 and 12 months of age. There may be something to learn from this, for this is the age when most babies are crawling or starting to walk and hence are more liable to injure themselves or to become unduly tired than are younger babies. In addition, injections of various kinds are still commonly given to these older babies.

The work of McCloskey and others has shown that the virus of poliomyelitis tends to settle in those parts of the spinal cord which



FIGURE 2.

Showing Percentage of Male and Female Patients in various Age Groups—675 Males; 498 Females.









Poliomyelitis—Showing attack rates per 100,000 population in each of various age groups for 1,173 proved cases for the period 1st October, 1950, to 30th June, 1952.

675 male cases, 498 female cases.

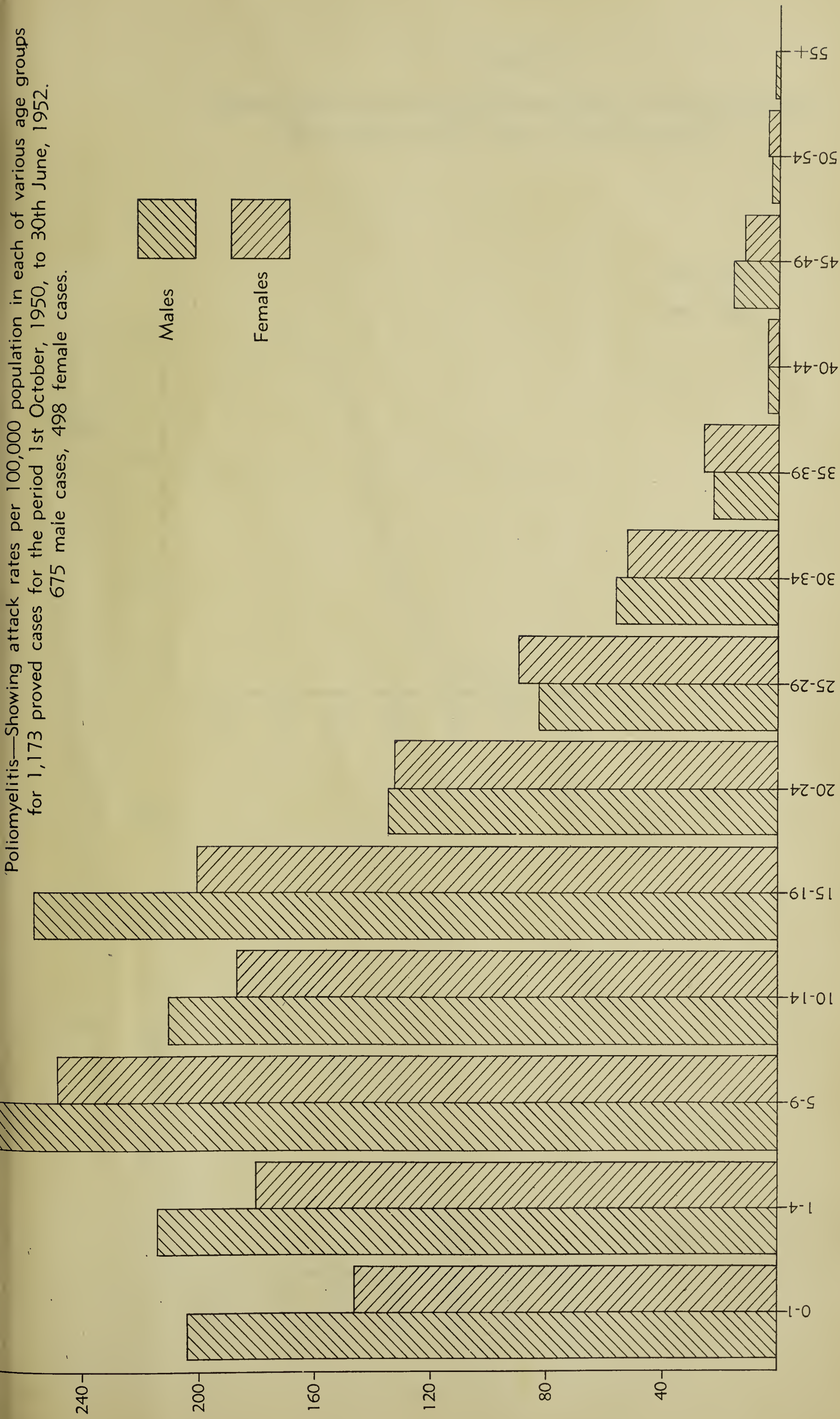


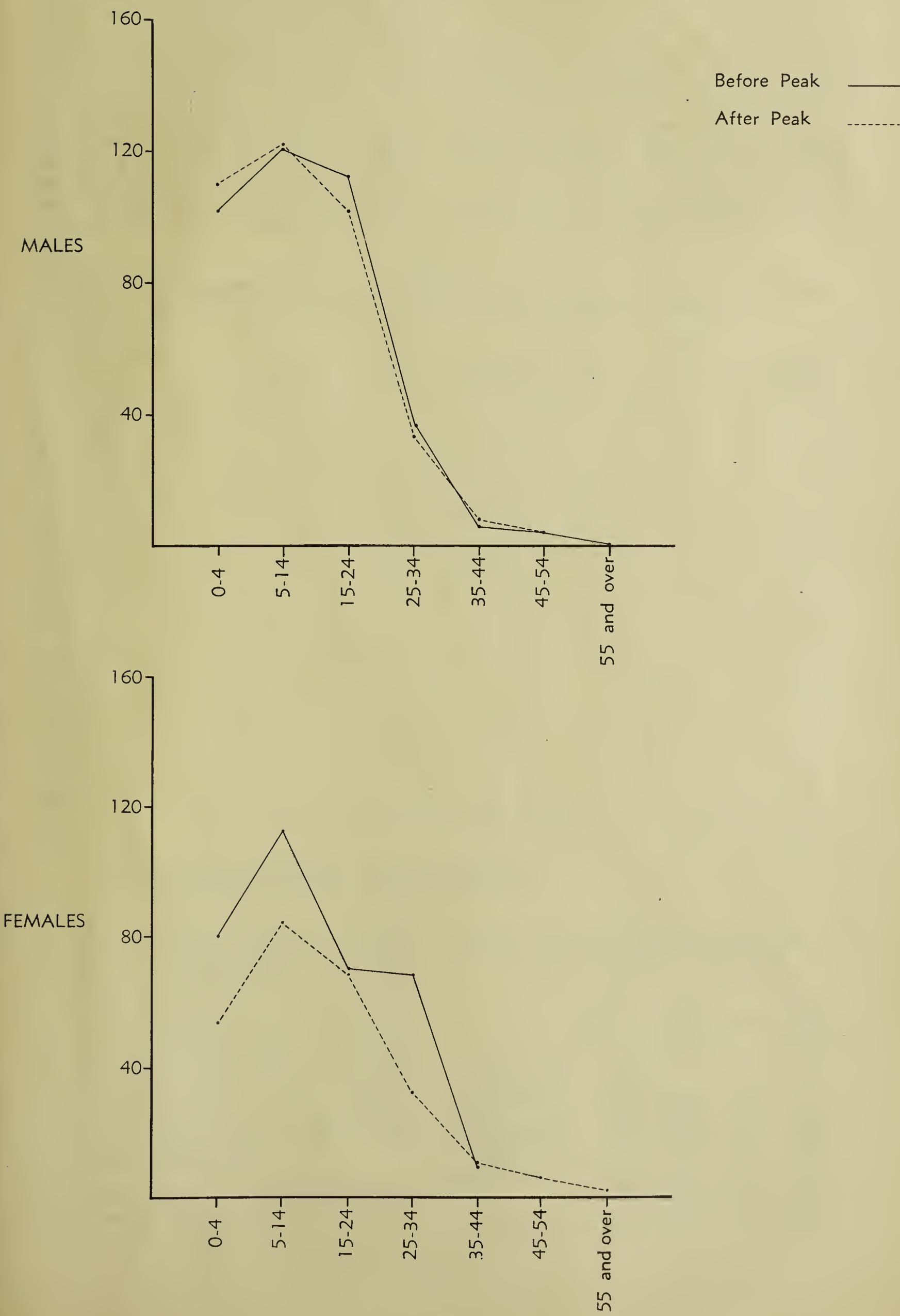






FIGURE 4.

Showing attack rates per 100,000 population of various age groups before peak and after peak of present epidemic.









supply nerves to tissues damaged by injury or by injection. It is difficult to prevent injuries in babies, but it is clear that prophylactic injections for diptheria, whooping cough and tetanus should be given under the skin rather than into the muscles, and that as many of these injections as possible should be given before the baby is nine months old. Indeed, there is no reason why these courses of immunisation should not be commenced when a baby is between three months and six months of age, so that only reinforcing or “booster” doses are required after a baby attains the age of nine months. In this way, a slight but definite risk of poliomyelitis following prophylactic injections, given at a time when poliomyelitis virus is present in a community, will be considerably reduced. Even when poliomyelitis is

not epidemic it is a good idea to continue to give prophylactic injections to babies before they are nine months old because parents quickly become apprehensive if a routine is suddenly altered during an outbreak.

Alteration in Age Groups attacked as Epidemic Progresses.

As mentioned before, the peak of the epidemic was reached in April, 1951. In several recent epidemics elsewhere, it has been noted that poliomyelitis tended to attack relatively more patients in the older age groups as the epidemic progressed. Table 5 shows the attack rates and percentage of total cases in various age groups of males and females for the period up to the peak and following the peak, of the present outbreak.

TABLE 5.

SHOWING THE NUMBER, ATTACK RATE AND PERCENTAGE OF TOTAL CASES OF MALES AND FEMALES WHO DEVELOPED POLIOMYELITIS (a) BEFORE PEAK AND (b) AFTER PEAK OF EPIDEMIC.

Age Group.	Males.						Females.					
	Number.		Per cent. of Total.		Attack Rate per 100,000.		Number.		Per cent. of Total.		Attack Rate per 100,000.	
	B.P.*	A.P.†	B.P.	A.P.	B.P.	A.P.	B.P.	A.P.	B.P.	A.P.	B.P.	A.P.
0— 1 .. .. .	14	16	4.0	4.9	95.5	109.2	8	4	2.9	1.8	57.1	28.5
1— 4 .. .. .	60	64	17.3	19.6	103.9	110.9	47	33	17.1	14.7	85.6	60.1
5— 9 .. .. .	73	85	21.0	25.9	126.4	147.2	72	54	26.3	24.1	127.6	95.7
10—14 .. .. .	57	46	16.4	14.0	116.2	93.8	43	32	15.7	14.3	92.4	68.8
15—19 .. .. .	64	47	18.4	14.3	147.7	108.5	32	29	11.7	12.9	77.2	69.9
20—24 .. .. .	36	26	10.4	7.9	77.8	56.2	28	30	10.2	13.4	63.1	67.6
25—29 .. .. .	23	17	6.6	5.2	47.4	35.1	26	19	9.5	8.5	56.8	41.5
30—34 .. .. .	11	15	3.2	4.6	24.1	32.9	11	10	4.0	4.5	25.0	22.7
35—39 .. .. .	4	6	1.2	1.8	8.9	13.3	7	6	2.6	2.7	16.3	13.9
40—44 .. .. .	1	1	0.3	0.3	2.3	2.3	0	2	..	0.9	..	5.2
45—49 .. .. .	3	3	0.9	0.9	8.4	8.4	0	2	..	0.9	..	6.2
50—54 .. .. .	0	1	..	0.3	..	3.0	0	2	..	0.9	..	6.2
55 and over .. .. .	1	1	0.3	0.3	1.0	1.0	0	1	..	0.4	..	1.0
All ages .. .. .	347	328	100.0	100.0	56.0	52.9	274	224	100.0	100.0	46.3	37.9

\* B.P. Before Peak (from 1st October, 1950 to 30th April, 1951).  
† A.P. After Peak (from 1st May, 1951 to 30th June, 1952).

There is a tendency for more older patients to be attacked in the second half of the epidemic but there is no significant shift to the right in the percentage of cases in the older age groups. In fact, in the case of males, the two curves of percentages show a remarkably parallel course, whilst in the case of females the only change worthy of comment is that the percentage of females in the 25-34 age group increased from 21.9 before the peak to 26.3 after the peak (see graph).

The average age of onset has been analysed and set out in Tables 6 and 7.

TABLE 6.  
SHOWING AVERAGE AGE OF 681 MALE AND 473 FEMALE PATIENTS IN QUARTERLY PERIODS.

—	Males.		Females.	
	Number.	Average Age (Years).	Number.	Average Age (Years).
1950—				
October-December	43	13.54	43	10.52
1951—				
January-March ..	241	10.58	138	15.15
April-June ..	199	13.01	139	14.17
July-September ..	93	12.11	73	15.88
October-December	55	12.89	36	16.09
1952—				
January-March ..	37	15.43	30	14.67
April-June ..	13	15.54	14	16.21
Total ..	681	12.25	473	14.47



TABLE 7.

SHOWING AVERAGE AGE AT ONSET OF MALE AND FEMALE PATIENTS BEFORE AND AFTER PEAK OF EPIDEMIC.

Period.	Males.		Females.	
	Number.	Average Age (Years).	Number.	Average Age (Years).
Before Peak (to 30th April, 1951)	361	11·54	249	14·21
After Peak (from 1st May, 1951) ..	320	13·59	224	14·76
Whole Period	681	12·25	473	14·47

Apart from the average age of onset in females being slightly greater than that in males, there is no significant trend in these figures. The average age at onset did not increase as the epidemic progressed.

Mortality Rate.

Of 1,173 proved cases of poliomyelitis, 108 were fatal, giving an overall mortality rate of 9·2 per cent. This relatively high mortality rate is influenced by the rigid criteria of diagnosis adopted in accepting a notification as a case of poliomyelitis. For instance, if all of the 1,343 notified cases were accepted

as cases of poliomyelitis as is done in many parts of the world, the mortality rate would be reduced to 8·1 per cent. Even this rate is high, and is accounted for by the increased

TABLE 8.

SHOWING MORTALITY RATE (DEATHS PER 100 PROVED CASES) IN VARIOUS AGE GROUPS.

Age Group.	Established Cases.	Deaths.	Mortality Rate.
0— 4 .. ..	246	9	3·6
5—14 .. ..	462	30	6·5
15—24 .. ..	292	35	12·0
25—34 .. ..	132	23	17·4
35 and over .. ..	41	11	25·8
All ages ..	1,173	108	9·2

population of adults attacked during this epidemic. It is well known that the death rate from poliomyelitis is lowest in children and this is well brought out by Table 8 which shows that the mortality rate increases progressively with age. The mortality rate increased from 3·6 per cent. in the age group 0-4 years, to 25·8 per cent. in patients 35 years of age and over. In adults the disease runs a more fulminating course, and a fatal termination is much more likely than in children.